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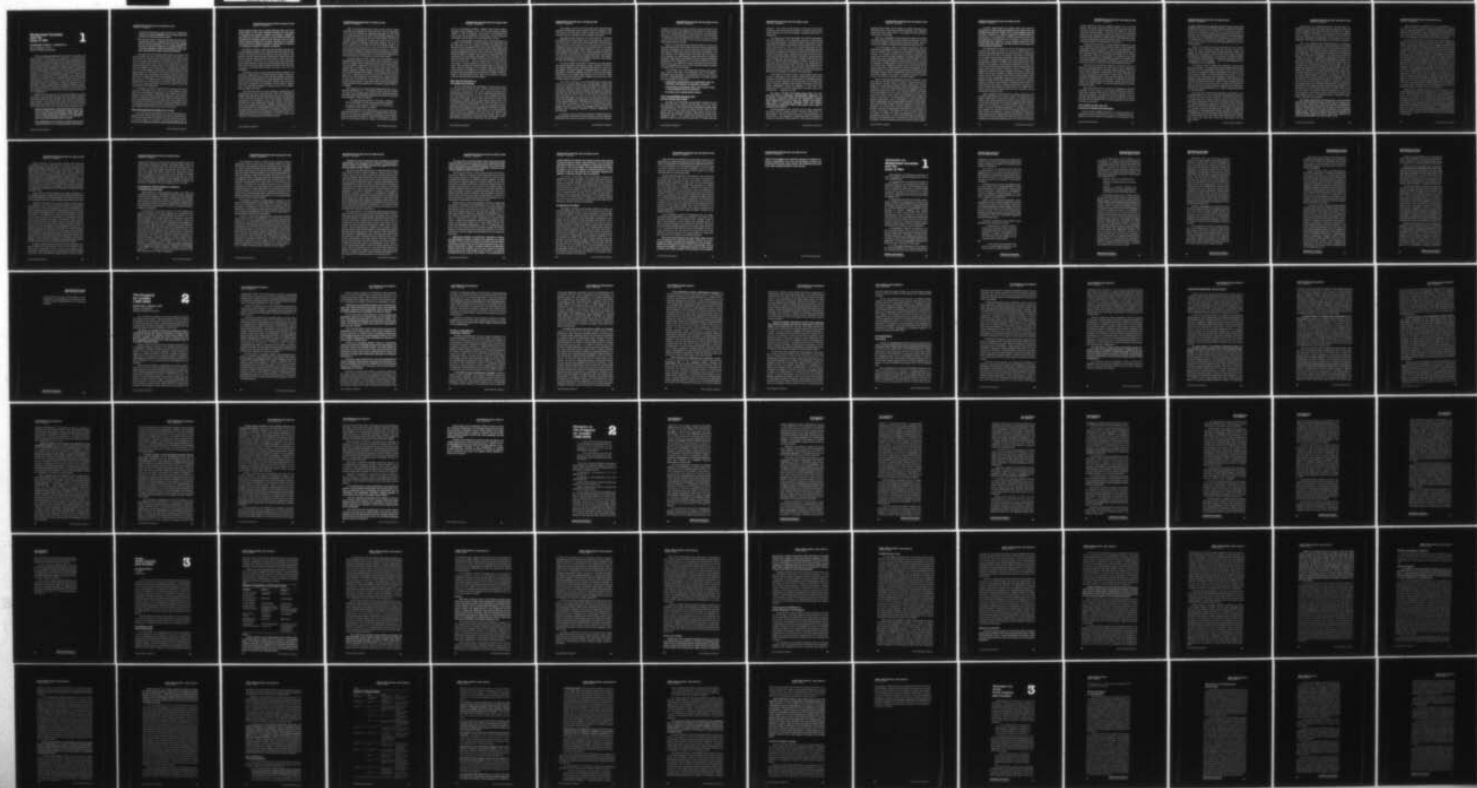
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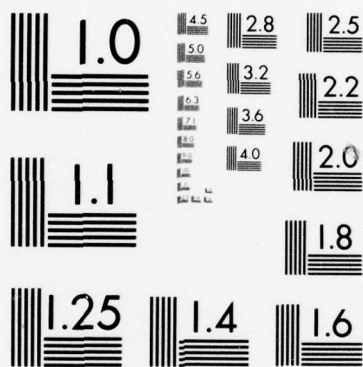
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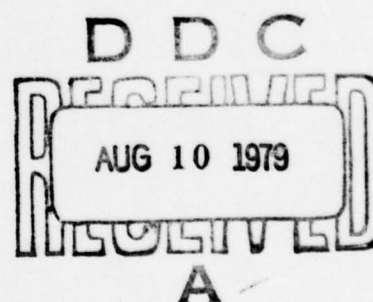
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The Future of Conflict

The Seminar Series of the National
Security Affairs Institute, 1978-1979.

(10) ~~Captain~~ John J. McIntyre, USN

Director

The National Security Affairs Institute

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Foreword

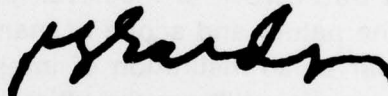
→ To many, the modern international political system is an anomaly. Not a community, it is a political society without a government; a burgeoning collection of sovereign states sharing a common planet, but trapped in a shared dilemma of national sovereignty: the resolution of conflict between them demands either partial forfeiture of that sovereignty to some higher international authority, or ultimately the exercise of it through the organized violence of interstate conflict. In the relatively few centuries since this modern nation-state system developed from a patchwork of medieval fiefdoms, both the art of warfare and the nature and scope of man's conflicts have evolved apace; and war as an institution of international society seems to retain its essential utility as the ultimate mechanism for conflict resolution, despite logic to the contrary.

For the Alamogordo bomb signalled a change in the utility of general war in a very basic way. Since 1945, fundamental questions have been raised as to the rationality of warfare, concerning both its internal dynamic and its effects on the very international system it serves, thereby raising another dilemma. Potentially destructive of the very parameters of the system itself, the resolution of conflict through the waging of modern warfare no longer appears appropriate, either to the times or to the contemporary society of increasingly interdependent states. But conflicts between these states continue and even increase; subnational groups and interests proliferate; and armed violence remains a possible outcome of a wide range of contending interests. Something may be happening, however, to traditional views of the role of conflict as the perceptions of states change through modernization on a shrinking globe of finite and limited resources.

→ This series of seminars was planned to look at the future of conflict, out toward the end of the century, and to explore, from a variety of viewpoints, the inherent risks to the United States in that future. In one sense, the series was highly successful, in that it generated a spectrum of insights into these hazards, thereby providing excellent food for thought to the reflective reader. On

the other hand, those who seek a roadmap to the future or firm conclusions on forms of future conflict will be disappointed, not in what our group of distinguished panelists have to say about this future, but in what they admit cannot be said, given the uncertainties of the turbulent and precarious present.

It is my pleasure, then, to commend to you the papers and the accounts of the discussions which they facilitated during our quest for some insights into the potential for, and nature of, conflict in the years ahead. It was a difficult quest at best, only infrequently producing solid consensus; but it was one which we hope will provoke further discussion and the same degree of stimulation provided to those who first undertook it.



R. G. GARD, JR.
Lieutenant General, USA
President

Preface

When the National Defense University was established in 1976, its two constituent colleges—the historic National War College and the Industrial College of the Armed Forces—continued their long tradition of excellence in education with a fresh synergism provided by the common University framework. The new University, moreover, began an involvement with the broader community at large—an involvement it viewed as being quite apart from the educational charters of its colleges—and eagerly sought ways to reach toward those more traditional University functions: the generation of knowledge, the diffusion of new ideas.

As its outreach programs begin to bear fruit, the University views itself increasingly as a ready forum where the informed opinions of all sectors of society can be exchanged in an ongoing dialogue of exploration—the exploration of contemporary issues in national security policy, defense resource management, and civil-military relations. For this purpose, the National Security Affairs Institute was established at the University in 1977, and this book is an outgrowth of one of the Institute's programs.

Each year for the past six years, the Assistant Secretary of Defense for International Security Affairs and The National War College (later, the National Defense University) have cosponsored a major conference to address key national security issues from a number of perspectives. To maintain the dialogue established in these conferences, a continuing seminar series was inaugurated in 1977 which extended the idea of the major annual conferences into a series of mini-conferences. The success of this first-year effort in addressing *Strategic Access* stimulated the second series, *The Future of Conflict*, on which this report is based. The meetings were held monthly during the fall, winter, and early spring of the 1978-79 academic year and drew together the distinguished group of panelists whose biographies appear in the final section of this book.

The idea for the series grew out of the interest generated in the University Research Directorate when Ambassador Francis T. Underhill, Jr. as a Senior Research Fellow, was working on his paper *Modernized Society and the Uses of War*. The points Frank

made in his paper elicited a strong response from the other Fellows, senior military and government scholars in residence, and suggested that the issue could bear examination from a number of additional aspects. We planned the series, beginning with a discussion of his paper (chapter 1), and selected five variations on the theme for the remaining sessions. This book is essentially a report of the proceedings of the six sessions.

Proceeding from the Underhill thesis that war has differing elements of utility to nation-states as a function of their progress toward modernization, the second meeting tried to translate theory into an estimate of the actual prospects for conflict in the specific geopolitical setting of the next two decades. Since arms, arms control, and the military orientation of the key players are bound to have an effect on the prospects for conflict in the years ahead, the third meeting (chapter 3) tried to come to grips with the intertwined issues of arms control, on the one hand, and the utility of modern military power, on the other hand. The entry of modern technology as a key ingredient in shaping not only the battlefields of the future, but the policies which might be constructed to avoid such battlefields, prompted the fourth session. Still less understood was the relationship among traditional forms of conflict, the historic involvement of nation-states in wars over national issues, and the emergence of the subnational group onto a stage heretofore dominated by sovereign players. The fifth session aimed at getting to the heart of that relationship.

The summary session was designed to arrive at some consensus as to what it all meant for national security policy and the defense decisionmaker. The reader will note that the sixth and final session did not turn out that way at all. The concept of *power* and its diffusion, erosion, and reconstitution in today's world acted as a magnet for the attention of the group in its final session and the consensus of the group is recorded in chapter 6—that conflict is not inevitable, that American power is essential to insuring that it remains avoidable, but that time is running out.

Each session followed the format of basing the evening's discussion on a paper which was circulated in advance of the meeting to provide the framework for discussion. In some cases, this technique served to channel the thoughts of the panelists into fairly disciplined lines of attack on the key issues raised in

the paper. In other cases, as the perceptive reader will immediately note, one or more single issues dominated the entire discussion and emphasized the fact that the perspectives of the participants frequently suggested an expansion or elaboration on these themes.

Each of the following chapters contains the framework paper, which was designed to stimulate the discussion, and a summary of the actual discussion itself. No attempt has been made to edit the papers to conform to the subsequent discussions, and the discussions themselves are reported virtually exactly as they occurred, without attribution of remarks to particular members of the group. (Nonattribution of individual remarks is a long-standing policy of the National Security Affairs Institute gatherings and helps free individual panelists from any inhibitions which might stem from an institutional affiliation.)

The panelists themselves were drawn from a broad spectrum of community activity, although each has been fairly prominent in the area of national security policy activities. Generally, a core group attended each meeting of the series, and this group was augmented, as the focus of each particular meeting changed, by a few specialists in the field of interest. For example, for the session addressing arms control, Mr. George Seignious and Mr. Barry Blechman of the Arms Control and Disarmament Agency contributed enormously from their perspectives as practitioners.

It is certainly appropriate that recognition be given to these busy and involved individuals who shared their thoughts with us during the course of this series. Naturally, the National Defense University extends to each of the participants in this series the warmest thanks for their individual and collective contributions to this effort. Appreciation is also due to Lieutenant Colonel Verna S. Kellogg, USAF, the Deputy Director of Research at the University; to Mr. George Maerz and to Ms. Evelyn Lakes who

struggled with the process of getting it all into print; to the personnel of the NDU Visual Communications and Printing Division, who designed and composed this volume; and to the administrative staff of the Research Directorate, who took this first-of-a-kind effort in stride as being "all in a day's work."



JOHN McINTYRE
Captain, USN
Director, The National Security
Affairs Institute

Fort Lesley J. McNair
Washington, The District of Columbia
July 1979

Modernized Societies and the Uses of War

1

Ambassador Francis T. Underhill, Jr.

Senior Research Fellow
National Defense University

There is widespread agreement that within the past 60 or 70 years, within the lifetime of one generation, a revolutionary transformation in human affairs has occurred comparable to the beginning of the New Stone Age or the building of the first cities and the development of civilized societies. This transformation is taking place in the vast expansion and application of knowledge we call modernization. Mankind is crossing a major watershed, a dividing line marking an alteration in the structure of human existence. In all of the fundamental aspects of the manner and quality of life, those born in the last quarter of the 19th century had more in common with the ancient Romans than with their grandchildren living today. This has been the period of the exponential growth in population, energy consumption, and urbanization. It has brought the first truly global problems of pollution, food production, and resource depletion. At the same time, this transition is yet so recent that we are hardly fully aware of all its implications.

Making war has been one of the most persistent of human activities in the 80 centuries since men and women settled in cities and became thereby "civilized." We might ask the question: Has transition to the modernized society in the last eight decades brought a change in the role and function of war? I should like to argue that it has, and in the following fundamental ways:

- Armed conflict between modernized states has lost virtually all its utility as an instrument of state policy. War can no longer achieve the objectives which encouraged its use in premodernized societies. It is irrelevant to most of the major problems facing us today.**
- The obsolescence of war does not come only from the restraining horror of a thermonuclear holocaust, a**

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rational perception of its nonutility, or a general increase in moral sensibilities, but is rooted also in the structure of modernized society itself.

- The human urge to violence persists, but the modernizing process is changing the channels through which it finds expression. As war across international boundaries loses its relevance, as external threats become less plausible, nations find themselves more and more threatened by violence generated internally.

This thesis may at first glance seem difficult to accept when one considers the wars now being fought, the threats of war which face us in many parts of the world, and the vast amounts of money nations are spending preparing to fight wars. In the face of these conditions, how can one argue that war is becoming obsolete? The answer lies in the briefness of the period since the beginning of the transition. A fundamental change in one of our most deeply rooted social institutions does not take place quickly or in all parts of the world at the same time. All of mankind has not yet crossed the watershed. Many societies are still far from modernized. The forces changing the nature of war, therefore, do not operate yet to the same degree everywhere. Nonetheless, as modernization continues, the process now at work in the more advanced societies will begin to bear with equal effect on the latecomers.

To develop my thesis, I should like to consider war and the factors in the society which bear on it as they appear on either side of the modernization watershed. The treatment of so vast a subject must of necessity be impressionistic, and I shall make no effort to buttress my arguments with extensive historical examples. General statements will not apply with equal validity to all countries; to point out the contrasts, it may be necessary to draw a line between premodernized and modernized societies that is more sharply defined than the line that in fact exists.

Why Premodernized Societies Go To War

Let us look first at the question of why premodernized societies go to war. Although society and the roots of violence within man himself have been the subjects of much analysis and study, for the purposes of this essay, I believe the reasons can be stated simply. **Men go to war (a) to take what they cannot get by**

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other peaceful means; (b) to protect what they have; and (c) to require others to do or take something thought to be true, good, or necessary; for example, a religion, an ideology, "civilization." Ian Smart of the Royal Institute of International Affairs has expressed the thought in similar terms. Men go to war, he says, (a) to conserve an asset; (b) to acquire resources; (c) to destroy a threat; and (d) to change a system, a government, an economy—to conserve, to acquire, to destroy, to change.

Successful warfare in premodernized societies brought significant material rewards. Most obvious were the spoils of war, the stored wealth of the vanquished, his gold, jewels, and artifacts, and the indemnities and tributes that could be exacted from him. Equally important was human labor—control over people as slaves or levies for the victor's army. There was also productive capacity—agricultural lands and mines. The victor, with control over new wealth, people, and land, could, with this net gain in strength and resources, move on to further conquests.

Successful warfare also produced psychic benefits. The removal or destruction of a threat brought a sense of security. Civilizing the savage and converting the heathen produced a sense of moral accomplishment. Power gained over others created pride and national self-esteem. Warfare also provided adventure, excitement, and recreation. In the words of Marion Levy, "No one has succeeded in taking the fun out of murder, rapine, pillage, and arson."

Wartare was also the most complex, broad-scale, and demanding activity of premodernized man. The challenges of leading men into battle, and organizing, moving, and supporting armies, attracted the talents of the most vigorous, enterprising, intelligent, and imaginative men in the society. Alexander of Macedon and Julius Caesar are examples. "Warrior" and "statesman" were usually synonymous. Despite the particular ethic of traditional societies—rewards based more on social position than on achievement—armies tended to be directed by reason and to make their selections for advancement on the basis of merit. The military was one of the few professions in which an able, ambitious boy of humble origin could rise to the top.

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War in the premodernized society was therefore useful, satisfying, and profitable for those who won. Carl von Clausewitz in his *On War* provided the conceptual framework for this utility in his often quoted (and as often misinterpreted) statement that war was an act of policy carried on by other means. This was not cynicism, but a description of what war ought to be: an act to achieve a specific, politically determined purpose. "No one," he wrote, "starts a war—or rather no one in his senses ought to do so—without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it." Throughout his work Clausewitz insists that war must always be subordinate to policy. At the same time, it is clear that he regarded war as a rational option for a leader pursuing national goals.

In the broader cultural context, war was accepted in the premodernized society as part of the human condition, a mechanism of change, and an unavoidable, even noble, aspect of life. The excitement, pageantry and drama of war, the sweep of change that it brought, the finer human traits which it could inspire—heroism, courage, loyalty, self-sacrifice—made it a vital part of man's literature and legends. In the background could be heard the weeping of the Trojan Women, mourning the destruction, the bloodshed, the suffering, and anguish brought by war, and throughout history there have always been condemning voices, but men nevertheless returned persistently to war, generation after generation, to conserve, acquire, destroy, or change.

The human drive to serve some higher cause also found a powerful expression in war. Christianity, Islam, and the concept of a nation or a people have inspired both dedicated sacrifice and bitter conflict. Ernest Renan captures this spirit in his answer to the question, "What is a Nation?"

To have common glories in the past, a common will in the present; to have done great things together; to wish to do greater: these are the essential conditions which make up a people.

In the last quarter of the 19th century, war found new philosophical sanction in the writings of Charles Darwin. Darwin's theory of the evolution of species was applied to human society, and war was found inherent in nature and desirable as a mechanism for eliminating "inferior" nations. John Ruskin described

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war as "a wholesome calamity." Captain Alfred Thayer Mahan, the great naval strategist, saw in the "honest collision between nations," a "law of progress," and found in "the professions of arms, in war" the sources of an "heroic ideal." It was in this spirit that William James sought "the moral equivalent of war."

In the first decades of the 20th century, particularly after the carnage of World War I, social Darwinism was discarded, and war was seen, not as a romantic and heroic purifying fire, but rather as an evil aberration. The roots of war were sought, both in man's institutions and within man himself, so that through this self-knowledge ways could be found to end war. Throughout this scholarly analysis, however, was a thread of pessimism that war could ever be completely eliminated, and a reluctant concurrence with the dictum of Baron Jomini that "war is not an aberration of human life . . . but an integral part of the history of civilization." Quincy Wright in his monumental *A Study of War* wrote: "War has been the method actually used for achieving the major political changes of the modern world, the building of nation-states, the expansion of modern civilization throughout the world, and the changing of the dominant interests of that civilization." Bernard Brodie wrote: "War is intrinsically evil, though it may still occasionally prove necessary."

War and the Structure of Premodernized Society

Let us now consider the relationship of war to the structure of the premodernized society. With three-fourths of the population working on the land, these societies were predominantly agricultural. The flow of wealth was primarily from the rural areas to the city; the city in turn provided the farmer with minor amenities, simple tools, and protection from the predations of nomadic tribes or the armies of other cities. This rural population was largely stationary, tied to the land, if not by a social system like feudalism, then by the fixed cycles of planting and harvesting, by the dangers and difficulty of travel, and by the narrowness of the food surplus. The rural population was accessible for taxation, since its income, the harvest, was visible, bulky, and gathered at the same time each year. It was also largely self-sufficient—each town, each village, each hamlet, each family, could provide virtually all of its own needs.

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The energy sources for this society were overwhelmingly animate—animals and human beings. It was an inefficient, high-cost source, but there was no other. Control over human beings, therefore, was an important source of wealth and power.

Agricultural labor required no formal education. The peasant performed the same tasks, year-in and year-out, century-in and century-out. It was to the ruler's advantage to limit the peasant's horizons and keep him as close as possible to the intellectual level of the beasts that labored with him. Low levels of general education also made it easier for rulers to persuade their subjects that threats to their security existed and that war was justified. The decisions on war and peace were in the hands of a very few, and as Quincy Wright has noted, "War seldom springs spontaneously from the behavior patterns of the masses, but from the calculations of the leaders."

A society made up primarily of farmers and husbandmen was usually politically conservative, highly resistant to all forms of change. Peasant revolts, whenever they broke out, were usually spasms of violence against intolerable levels of cruelty and oppression—when the peasants were left, in the words of a Japanese Samurai, with enough food neither to live nor to die. These revolts never led to basic social changes, only a return to more tolerable levels of exploitation.

The ruler's function in the premodernized society was limited. He provided defense from outside attack, internal law and order, essential public works like roads and harbors, and collected taxes to support these services. He created and maintained conditions which permitted the peasant to produce, and when the ruler had done so, his job was done. Nothing more was expected of him. Even in the most centralized of premodernized states, the ruler's span of control was narrow. Authority was delegated and dispersed, and touched the daily lives of the people infrequently. The technical instruments for coordination and control did not exist, but in an agriculturally based society they were not needed. The peasant had few options. His planting and harvesting followed rhythms independent of governments.

The poor communications and poor transportation of premodernized societies militated against conflict between geographically distant peoples; but ignorance and isolation

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helped to preserve cultural differences and sharpen the distinctions which encouraged fear and hatred of closer neighbors. This xenophobia also encouraged the more technically advanced to see themselves as morally superior. From this sense of superiority came the justification for the use of force in taking up the white man's burden in the *mission civilisatrice* to the lesser breeds without the law.

Wars in the premodernized society tended to involve only the conflicting armies, and to leave cities and civilian populations relatively untouched. This was not true when the purpose of the war was pure destruction, such as the Mongol conquests in the 13th century, or the religious wars in Europe in the 17th century; but in general, war was limited in space, and while far-reaching decisions might hang in the balance, life off the actual battlefield continued in its normal pattern. In the town of Gettysburg, Pennsylvania, on 3 July 1863, one civilian was killed by a stray bullet while Confederate and Union Armies suffered 48,000 casualties in a battle only a few miles away.

To summarize, war in premodernized societies was acceptable, useful, often seen to be necessary, and, if successful, a profitable policy alternative. It involved for the most part military men on a geographically limited battlefield. This utility derived from the structure of the society:

- a population predominantly rural, agricultural, static, traditionalist, self-sufficient, uneducated, xenophobic.
- a government decentralized, elitist, with a narrow range of responsibilities toward the governed.
- an energy source predominantly animate.

The Incompatibility Between War and the Modernized State

The idea of a fundamental incompatibility between war and the industrialized or modern state has been current for almost two centuries. In 1795, Immanuel Kant published an essay called "Perpetual Peace," in which he argued that the "spirit of commerce" sooner or later takes hold of every nation, and is incompatible with war. Benjamin Constant, writing at the height of the Napoleonic Wars in 1813, argued that commerce and war were different means for arriving at the same end, "to obtain what one

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desires." Civilized human beings, he felt, would certainly recognize that commerce was superior to warfare, and as civilization advanced, as trade increased, commerce was bound to replace war.

The idea found further advocates. The French philosopher, Henri de Saint-Simon, in a pamphlet published in 1814 entitled *On the Reorganization of European Society*, maintained that the rationalism of industrial production would supplant the violence and irrationalism of war. The thought was taken up and developed further by a number of other contemporaries, with perhaps the greatest contribution coming from Saint-Simon's friend and collaborator, August Comte. Comte found a fundamental antithesis between military civilization, stretching back into the past, and the civilization of labor, stretching into the future. In 1842 he was bold enough to predict: "At last the time has come when serious and lasting war must disappear completely among the human elite." Karl Marx also supported the theory that industrialization and war were incompatible, but argued that this would not be revealed until the class war had been won and the exploitation of man by man had ended.

At the start of the 20th century, many believed that Comte and his colleagues were correct. Andrew Carnegie was so confident that the goal of his endowment for international peace would be quickly achieved that he provided in its charter that, once the primary objective was assured, the balance of the \$10 million endowment would be devoted to "the next most degrading evil or evils the suppression of which would most advance the . . . happiness of man."

The guns of August 1914 dashed those hopes. Far from being the enemy of militarism, industrialization appeared to be its servant. It produced wealth and the instruments of control which helped governments to raise, arm, maintain, and transport mass armies. Its technology developed vastly more efficient instruments of destruction. Mass media made it ever easier to rouse popular emotions.

Comte appeared a poor prophet, but the idea nonetheless persisted into the present century. Thorstein Veblen and J. A. Schumpeter tried to explain away the "tragic aberration" of World War I, and defended the essentially pacific character of industrial societies. More recently, a distinguished group of

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scholars have written on the subject, including Raymond Aron, Bernard Brodie, Louis Halle, Kenneth Boulding, John Wellman, Klaus Knorr, and Herman Kahn. I have drawn on their thinking in this portion of this essay.

Each has contributed his own special insights to the thesis, but there are two common themes which they all share. The first is that war between nuclear powers would be suicidal. The second is that warfare in modernized societies has lost its utility.

The first thought needs no extensive discussion. War has escaped the battlefield and now can, with modern guidance systems on missiles, touch virtually every square yard of the earth's surface. It no longer involves only the military profession, but engulfs also entire civilian populations. Nuclear weapons have made major war unthinkable. We are forced, however, to think about the unthinkable because a thermonuclear war could come by accident or miscalculation. We must also accept the paradox of maintaining a capacity to fight such a war so that we will never have to do so. Nevertheless, it is almost impossible for any rational person to consider the consequences of a thermonuclear exchange—square miles of radioactive rubble where great cities once stood, deaths in the tens or hundreds of millions—and see war as “an act of policy carried on by other means.”

There is also general agreement among the writers in this field that war has lost most of its utility in achieving the traditional goals of conflict. Control of territory carries with it the obligation to provide subject peoples certain administrative, health, education, and other social services; such obligations far outweigh the benefits of control. If the ruled population is ethnically or racially different from the rulers, tensions and chronic unrest often exist which further reduce the benefits and increase the costs of domination. Large populations no longer necessarily enhance state power, and in the absence of high levels of economic development can impose severe burdens on food supply, jobs, and the broad range of services expected of modern governments. The noneconomic, security reasons for the control of territory have been progressively undermined by the advances of modern technology. The benefits of forcing another nation to surrender its wealth are vastly outweighed by the benefits of persuading that nation to produce and exchange its goods and services. The seamless web of international commerce makes it impossible to harm someone without eventually harming oneself.

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In brief, imperialism no longer pays. The costs of domination of alien lands and peoples are far higher than any benefits gained thereby. Wealth, and to a large degree power and influence, depend on a nation's capacity to organize itself for production. This capacity, combined with an ethnically homogeneous population in a territory of modest and manageable size, appears a more reliable formula to bring human well-being than an extensive empire and a large, ethnically disparate population.

The relationship of the Soviet Union with Eastern Europe illustrates the costs of control. At the end of World War II, the Russians dismantled factories and took trainloads of reparations and loot back with them to the USSR. They forced on the Eastern European states grossly exploitative trade agreements. After a few years, it became apparent that these policies were damaging Soviet interests. The USSR had a vital political stake in the success of the regimes it dominated. Exploitation not only could not be reconciled with Socialist dogma, it also threatened the political control exercised by fraternal parties. The USSR was obliged to change to a policy of support and subsidy. Today, the USSR must sell raw materials to Eastern Europe at below world market prices when these commodities would produce vitally needed foreign exchanges if they could be offered for sale to Western Europe; further, the USSR feels it must buy, for political reasons, products manufactured in Eastern Europe when it is producing the same item in sufficient quantities in its own factories. Control over Eastern Europe brings to the USSR what it clearly considers strategic and military benefits, but at considerable economic cost.

Japan presents some instructive contrasts. Deprived of its colonial dependencies of Korea, Taiwan, and Manchuria by defeat in World War II, and denying itself in its Constitution any military role beyond defense of its home islands, Japan appears to have been pushed into a conceptual breakthrough on security. Japan has no capacity to project military power, no foreign bases, is almost completely dependent on outside sources for raw materials, yet has the world's third largest economy and a major voice in world affairs. It accepts the strategic nuclear stalemate reached by the superpowers, spends less than 1 percent of its GNP for military purposes, and with little more than the psychological and domestic political costs of a continuing American

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military presence, enjoys a defense guaranty from the United States. One might argue that Japan is getting a free ride, and would be forced to spend vastly more for defense if American protection were withdrawn. I doubt that this is so. The Japanese have come to recognize the subtle and paradoxical verity that a rearmed Japan would be a weaker Japan. Its strength and its security are enhanced by being a military threat to no one and an irresistibly attractive trading partner to everyone.

Shortly after World War II, General Walter Bedell Smith said that "diplomacy has rarely been able to gain at the conference table what cannot be gained or held on the battlefield." The battlefield is today irrelevant to most of the goals that we seek at the conference table. Our differences with others are, in almost all instances, non-zero sum games. The welfare of the world community depends on cooperative solutions to problems that transcend national boundaries—problems such as food supply, energy production, pollution control, and population control.

There is also a growing rejection of warfare on moral grounds. Nations reserve the right to go to war in defense of their national existence or their vital national interests; but, with these major exceptions, warmaking is no longer regarded as a morally acceptable instrument of state policy. All nations consider themselves peace loving, and their military services are directed by Departments or Ministries of Defense, not of War. There is a growing sense of a common human community. No longer can "lesser breeds" be coerced legitimately into docility and right thinking.

This trend may be due in part to an unconscious, growing perception of the inutility of war. Broad sensitivity to moral issues often develops only after an activity or institution has become unsuccessful, unprofitable, and inexpedient. It will be recalled that general opposition to the war in Vietnam on moral grounds did not emerge until it became apparent that we were not going to succeed.

**The Inutility of War and the
Structure of Modernized Societies**

Even if we can establish that war is no longer useful for the modernized society, and agree that war is no longer morally acceptable, we still confront the equivalent of the problem of the

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Surgeon General and the cigarette. We have conclusive proof that cigarettes cause cancer and heart disease, yet people still smoke. Is rational evidence of the inutility of war any more likely to prevail? To answer this question we must examine the factors in the structure of modernized societies which are working against the utility of war. These factors do not depend on human volition or acceptance, but function as objective, historical forces creating a new reality which imposes itself gradually on human consciousness.

What is a modernized society? Marion Levy finds a definition in the sources of power and the uses of tools. The higher the ratio of inanimate to animate sources of power, the greater the multiplication of effort by the use of tools, the higher the degree of modernization. The historian, Cyril Black, sees as the essential characteristics of modernized societies "the phenomenal growth of knowledge . . . and the unprecedented effort at adaptation to this knowledge"

The utility of war is profoundly affected by the society's source of energy. The modernized society creates wealth by the application of knowledge to the exploitation of inanimate sources; the traditional society depended on the labor of men and animals. While in the premodernized society, 70 to 80 percent of the population was engaged in agriculture, modernized society needs less than 10 percent of the population on the land to produce the food it needs. These changes removed one of the major motives for war—the desire to preserve or acquire control over large numbers of people. As we have seen, control over, and responsibility for, a large, unskilled population is a serious liability.

As a society moves toward greater and greater use of inanimate power, the units in it become progressively more specialized and less self-sufficient. Complex patterns of interdependency develop, patterns that are extraordinarily sensitive to disruptions in any part of the fabric. Every individual in a modernized society depends on hundreds of others, the vast majority of whom are strangers, to provide goods and services for his daily existence and well-being. To keep this integrated, specialized, and interdependent society operating smoothly and to mobilize and use the resources most efficiently, consolidation of policymaking in both the public and private sectors is necessary. From this need have come big corporations and big governments.

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Government in a modernized society must be highly centralized, but at the same time mechanisms must exist for communication between the government and the people. The masses must understand and accept the coordinating role of the government. A rapport must exist, and certain minimum levels of voluntary cooperation are necessary if the society is to function effectively. The fragile interdependence of the society requires it.

This is true whatever the prevailing political or ideological system. In democratic societies, regular elections, the activities of public and private interest groups, and the media provide the mechanism for maintaining the rapport between the people and the government. In nondemocratic societies, other mechanisms exist. Vast resources are allocated in the USSR and the People's Republic of China to propaganda, ideological exhortation, and "public education" to generate understanding and support for government programs. The complex state planning system is an instrument for communication in the economic sector. The government sets its economic objectives, and managers can make opposition views known if the basic socialist system is not questioned. The people do not have free elections as a channel for communicating with the government, but they have other ways of voting. Hedrick Smith in his book *The Russians* reports the pervasive black-market economy that has developed "*na levo*" (on the left), to evade Soviet economic regulations. He also reports the serious industrial problems of apathy, alcoholism, and absenteeism. By withholding cooperation, by good-soldier Schweikism, the Russian workers cast their negative ballots. The persistent failures of Soviet agriculture are due in part to this kind of "voting." It should be noted that coercion is not an effective response. Force cannot make a modernized society work. What Veblen calls the "increasing delicacy of interstitial adjustments" demands willing support.

The highly specialized, interdependent, and vulnerable structure of the modernized state, and the need for minimum levels of public cooperation, make it inherently unconquerable. While an agricultural society can be taken over and forced to function for the benefit of an alien conqueror, the modernized society cannot. There are too many ways it can be disrupted and crippled. Modern weapons provide an instrument to destroy a society, but paradoxically, they cannot make it work.

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Japan provides an example of this unconquerability. A nation without energy sources, without significant raw materials, Japan's prosperity depends on a complex international system of suppliers and markets, a highly disciplined and motivated work force, and effective governmental coordination and control. No one but the Japanese could make Japan function properly.

We are accustomed to think that our troops assigned to NATO are there to prevent the Soviet Union from taking over Western Europe and becoming thereby a greatly increased threat to the United States. Assuming that the USSR wishes to add to its present burdens of controlling Eastern Europe the vastly heavier and more complex burdens of domination over Western Europe (a highly dubious premise, in my judgment), what would the USSR do once its tanks had reached the English Channel? Are the Russians skillful enough to take over responsibility for the operations of the European Economic Community? Is it not likely that the doctrinal rigidities and proven inadequacies of the Marxist system they would impose would bring economic disruption and dislocation, somewhat more slowly, but just as certainly, as the passage of the Red Army? Could the Soviet system in the USSR itself stand the shock of exposure to, and absorption of, the social, cultural, political, and economic currents of Western Europe without changing fundamentally itself? Would it not be like the Mongol conquest of Han China in the 13th century in which the conquered absorbed the conquerors? There are no certain answers to these questions, but I believe it is at least highly doubtful that the Russians could take over Western Europe and make it work to their benefit.

High levels of general education are characteristic of a modernized society, and are necessary if it is to function effectively. This encourages at the same time mass participation in the political process. You cannot train a scientist, engineer, manager, or technician in his professional skills and prevent him from developing views on issues outside his field. This mass participation in politics takes place in all modernized societies, whatever the ideology or the political structure. Popular elections are not the only form of this participation. In nondemocratic societies it is part of the dialogue discussed above. No matter how authoritarian the regime, it cannot afford to ignore the attitudes of the people.

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Mass education is also socially leveling, and the gulf of knowledge that once separated the ruler and the ruled has largely disappeared. Dean Acheson, in his farewell remarks to his Department of State colleagues when he left office in 1953, said that national security "is a problem which must be dealt with wisely and justly and quietly by people who are expert at it." This elitist approach is unacceptable today. National security is no longer defined and pursued by senior executive branch officials in consultation with a few senior members of Congress. It is now the product of a rolling, and often disorderly, public consensus in which the rank and file of Congress, the congressional staffs, the media, the interest groups, and the public at large also play important roles.

High levels of public education and mass participation in the political process, including the central issues of national security, take decisions on war and peace out of the hands of a few and make them a part of a larger, easily manipulated, consensus.

Related to education as a structural factor working against the resort to war is the volume and speed of information dissemination. The near-monopoly of current knowledge once held by governments has ended. Issues today are not only aired, they are hyperventilated, and in the conflicting currents of public discussion, it is difficult for a *casus belli* to develop. It is also much more difficult for governments to act secretly and use force outside the public gaze. The capacity of the media, particularly television, to bring the horrors of modern war into the living room, also has had a major constraining effect. A friend in the French Embassy once compared the French war in Algeria, then going on, with our Indian Wars in the last quarter of the 19th Century. He said that we could never have completed our subjugation of the American Indian, if we were trying to do it today, with the United Nations passing resolutions, Reuters and *Agence France Presse* reporting the campaigns of General George Custer, and the TV networks carrying the Indian side of the story in interviews with Sitting Bull and Chief Joseph.

It might be argued that the impact of public information and public opinion on government policy is much less in non-democratic societies. This is true, but as modernization continues it becomes more and more difficult to isolate a whole population from international intellectual and cultural currents.

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Government efforts to control public opinion gradually lose their effectiveness. Skepticism, disbelief, and apathy begin at the top, and gradually spread down through the general public—in Warsaw it is said that people plan picnics on the days *Tribunu Ludu*, the official party paper, predicts rain. We are now only 5 years from 1984, and one is struck by the elements of George Orwell's pessimistic, anti-utopia that are not coming true. There are no Big Brothers. Doublethink and newspeak do not prevail, and no one proclaims that War is Peace, Freedom is Slavery, and Ignorance is Strength. The world suffers ills, but not these.

Convergence and the Nature of Violence In Modernized Societies

Modernization is a homogenizing process. Levy calls it the universal social solvent. Knowledge, the techniques of applying it, and the coordination and control necessary to make the application function efficiently, respect no international boundaries. The problems and the economic forces created by modernization also transcend national boundaries. Modernized societies therefore share basic characteristics, and there is a general tendency towards convergence.

As Americans, we see our country in a polar position opposite the Soviet Union. Other observers do not perceive that degree of difference. Francois Mauriac has written, "It is not what separates the United States and the Soviet Union that should frighten us, but what they have in common. Those two technocracies that think themselves antagonists are dragging humanity in the same direction." Another Frenchman, Raymond Aron, maintains also that "there are more characteristics in common than the doctrinaires in both camps wish to admit," and notes that the two societies share the same goal of achieving *economies of abundance by exploiting natural resources*. The differences, Aron says, are about the "merits of institutions—property systems, economic methods, political systems—which provide the framework of industrialization." In our society, Aron observes, "A capitalist regime in which the state is responsible for full employment and the volume of investment [and] distributes to the masses the surplus production resulting from increased productivity . . . is more like what was called socialism in the 19th century than the image of capitalism."

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Convergence, however, should not be overstated. Recent observers of the Soviet Union, like Hedrick Smith, find major differences still separating the two societies and little prospect for rapid movement toward ending these differences. I suggest only that modernization confronts both societies with essentially the same forces, the same problems, the same stresses. Each society will respond in ways that may differ, but both will be swept by separate paths in the same direction. Modernization brings specialization and interdependence of social units, which in turn requires centralization and high levels of coordination and control. In democratic societies this control is to a degree responsive to public will, but despite some romantic resistance and yearnings for a simpler age (known as conservatism), we are moving steadily in the direction of greater supervision and control of our lives exercised both by government and other centralized organizations in the private sector. In the socialist states this control is part of official dogma.

The USSR, as well as the United States, is caught up in the web of worldwide economic interdependence. The Soviet Union must turn frequently to massive grain purchases to feed its population. It depends for over one-third of the protein in the Soviet diet on fish caught off other nations' coasts. With its Eastern European dependencies, the Soviet Union is \$46 billion in debt to Western banks and governments.

Observers have often suggested that modernized societies might resort to war in competition for scarce resources like petroleum. It is conceivable that shortages might become this critical, but there are inner contradictions in the use of force for this purpose. The objective would be peaceful enjoyment over an extended period, but the use of force to seize raw materials would tear the fabric of transnational cooperation on which general economic well-being is based and generate reactions that would prevent such enjoyment. Oil fields might be seized, but could such an asset so exquisitely vulnerable to sabotage be exploited? In the words of Dean Inge, "A man may build himself a throne of bayonets, but he cannot sit on it." It would be the practical equivalent of kicking a television set to improve the picture, or hitting a fine watch with a hammer to get it started.

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Perhaps the most important factor pushing war towards obsolescence is the changing role of violence. In modernized societies, violence is internalized, directed more against the state itself than against foreign enemies.

We have noted that governments in premodernized societies had limited functions—national defense, internal security, basic public works, and a taxing system to support these services. Thomas Jefferson defined the ideal when he said that a government that governs least governs best. In the modernized society, the role of government has vastly changed. Specialization and interdependence create the need for high levels of coordination and control. Concentrations of economic power in centralized organizations in the private sector bring demands for public regulation. The state is expected to provide a broad range of protection, services, and support. It is expected to manage the economy and assure equity in the distribution of its benefits. Big government is the result. Most Americans still cling instinctively to the Jeffersonian ideal, bewail the bigness of government, and like to see themselves as capitalist individualists. Yet, at the same time, most favor government intervention in the areas that will protect and further their private interests. Cumulatively this produces more controls on everyone.

The government in a modernized state becomes therefore both the ally and the enemy of the individual. When he has a grievance, he turns to the government for redress, and if redress is not forthcoming, he feels hostility toward the government. To these tensions are added all of the other pressures and constraints of the modernizing process. The sheer pace of change is itself profoundly disturbing. Toffler calls it "future shock." We are educating our children for an unknown future, and the social control which existed in premodernized societies because children learned from their parents or older members of their families is disappearing today. The individual feels himself confronted by huge, impersonal forces which he cannot completely understand, much less control. Frustration, alienation, and undifferentiated hostility develop, and this hostility is directed at the society itself, or transnationally, at the "system." In this atmosphere loyalty toward the larger political unit, the state, tends to dissipate as the individual seeks identity and support in small ethnic, religious, or political groups. We see this not only in Quebec, Northern Ireland, Scotland, and Belgium, but also among the non-Russian peoples of the Soviet Union.

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The process of modernization itself often encourages internal violence. We have noted the need for centralized coordination and control in a modernized society. This control often takes authoritarian political forms, particularly among the late-comers seeking to speed up the process.

These governments, often under military domination, provide the stability, continuity, and bureaucratic structure that encourage economic development, but they lack the self-correcting mechanisms for peaceful political changes. As these authoritarian regimes begin to produce results, as the modernization process accelerates, pressures are generated for greater participation in government and higher levels of individual freedom, which the ruling elite is usually unwilling to grant. Success, therefore, produces tensions, and when such regimes become corrupt, inefficient, and oppressive, violence is the only way in which control can change hands. In most of the world, therefore, internal violence is not an aberration, but an intermittent, normal part of the political process.

Modernization produces boredom. The more modernized the society, the greater the interdependence, and the higher the necessary level of centralized control. Individual freedom inevitably is more and more circumscribed. These limitations may be voluntarily accepted or they may be imposed, but in either case a certain uniformity, drabness, and dullness result. In this continuing boredom, small irritations and minor injustices swell in importance and seem intolerable, and violence often results. Organized professional athletics disseminated by television provide some release, but in many places terrorism becomes the recreational equivalent of war. It is noteworthy that two of the most disciplined modernized societies, the Federal Republic of Germany and Japan, have produced two of the most anarchistic terrorist gangs—Bader-Meinhoff and the Japanese Red Army.

Modernized societies are particularly vulnerable to internal and transnational violence. Weapons and explosives are readily available. The terrorist has access to modern communication techniques. Huge urban concentrations provide cover and a secure environment in which to operate. Modern transportation systems give him mobility, and the vast numbers of people moving around the world make it easy for him to conceal his movements across national boundaries. The communications

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media publicize his activities and greatly increase their political and psychological impact. Most important of all, the terrorist exploits and preys on the vulnerability of modernized societies to disruption. The more complex and interdependent the system, the easier it is for crude violence to bring the system to a halt. Whatever cause he may espouse, his immediate objections are negative—to disrupt, paralyze, deny, and destroy.

Terrorism, like treason, never prospers, because to paraphrase Sir John Harington, if it prosper none dare call it terrorism. If his cause succeeds, the terrorist becomes a freedom fighter and a patriot. However, as he takes over control of a modernizing society, as he becomes responsible for managing the economy and providing services, as his objectives become constructive and positive, he becomes vulnerable to the same kind of violence which brought him to power. We see today in Indochina the Cambodians using against the Socialist Republic of Vietnam the same tactics of terrorism and guerrilla warfare that the Vietcong and North Vietnamese used against the Republic of Vietnam and the United States.

Prospects for Conflict

The areas of military conflict today, potential or actual, are mainly between the nations of the Third World. Only the poor can afford to engage in war. In these societies in the early stages of modernization, the traditional rationale for warfare—the control of land, peoples, and fixed wealth—continues to carry weight, and the factors we have discussed that dispose a modernized society against international conflict are not yet as strongly felt. Some conflicts are related to such social wrongs as white domination in Africa; some in the Middle East have their roots in ancient injustices. Others arise from ethnic and tribal rivalries and the vagaries of old colonial boundaries. However the conflicts are resolved, whatever the nature of the governments they succeed in establishing, the fundamental problems of the Third World will remain—jobs, food, housing, health, and social services. As these nations struggle to throw off what they feel are old chains, the inexorable process of modernization and the demands of their own people for its fruits are fastening on new and stronger bonds. The oil wealthy among them are piling up sophisticated armaments, but, in a figurative sense, the barrels of the weapons cannot be aimed low enough to be brought to bear on the true threats to their security.

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These conflicts are dangerous, nevertheless, because of the possibility that modernized states might be drawn in to support a client. The significance of these wars is also magnified by the modern arms provided by the industrialized patrons. The technology of modern warfare is universally dispersed, and such conflict requires extensive logistic support. Wars could not be long sustained without outside assistance.

We also face the tragic and ironic paradox that as the utility of warfare declines, the nations of the world, modernized or premodernized, are putting vaster and vaster resources into developing their capacities to fight wars. For the United States and the Soviet Union, it is primarily the compulsion to balance the other side's technical capacity to destroy—an insane circle which the Strategic Arms Limitation Talks are attempting to break. Elsewhere in the world, the driving force is the momentum of history. Vestigial social institutions persist after they have lost their original function, and a nation's capacity to defend itself is one of the fundamental attributes of statehood. The armed forces in many parts of the world find themselves more and more involved in governing and defending the state against internal enemies than in fighting foreign wars. They are therefore in a position to make priority claims on the nation's resources and equip themselves with modern weapons largely irrelevant to the problems they face.

In the Cretaceous period of the Mesozoic era, just before the great lizards disappeared, they reached a high level of specialized development, and attained a size, strength, length of tooth, and thickness of armor plate never equalled before nor since. Professor Parkinson has pointed out that when the public building accommodates perfectly the function being performed in it, it is usually a sign that the function has passed its peak of need. High levels of refinement and capability are often indicators that an institution is losing its reason for being, and this may be true for today's military establishments.

The world's great problems are rarely solved. They are more often bypassed by changing attitudes, defused by a technological change, overtaken and supplanted by new problems. I believe that international warfare is now in this process. There is always the possibility of a catastrophic accident, but the currents of history are moving certainly and inexorably in this direction.

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This is not to suggest that a peaceful millennium is dawning. Violence is dissolving in one form, but emerging in another, and modernized societies must confront this challenge among the many other pressing problems of the new age.

**Discussion on
Modernized Societies
and the
Uses of War**

1

Has modernization affected the institution of war? Ambassador Underhill asserts that it has, in a very essential way.

He suggests that the process and concept of modernization has so changed the context in which the traditional use of the institution of war must be brought to bear that, for those societies at the upper ends of the spectrum of modernization, war has lost its utility as a conflict resolution mechanism. Only the poor can afford to engage in war.

In tracing the evolution of his thesis, Ambassador Underhill acknowledges his debt to the insights on the modernization process generated by Professor Marion Levy, the sociologist, as well as to the commentators and philosophers whose writings on ancient, medieval, and modern warfare fill the pages of past and recent intellectual history. Modern societies—as distinguished from premodern and modernizing contemporary societies—differ in very fundamental ways from those societies to whom warfare is useful and for whom a political system was erected on the theory of such usefulness.

To Ambassador Underhill, the advent of the truly modern society, one in which inanimate energy largely has supplanted animate energy, signals a new epoch. This epoch is at hand, without either fanfare or even widespread appreciation of its arrival, much as the Air Age arrived with few headlines in the days immediately following the Wright brothers' first flight at Kitty Hawk.

In a wide-ranging discussion of this thesis in the opening meeting of the series, three families of countervailing opinions were proposed and

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discussed by an articulate group of scholars and professional military and defense specialists whose viewpoints, collectively, provided a large degree of self-balance.

One family of opinion held that the preponderance of contemporary evidence suggests that *it is incorrect to impute disutility to war because of its putative counter-productivity to the modern society or that, because war would severely disrupt such societies, it is therefore "disuseful."*

A second family of opinion expressed doubts as to the nature of the linkage between war and the phenomenon of modernization. Some argued that *it is incorrect to assume such a linkage and, if such a linkage can be demonstrated, it is incorrect to assume that it suggests disutility any more than it suggests enhanced utility.*

Finally, a third consensus developed, subtly emerging from the nuances of argument proposed in defense of these counter-theses, which held that *notwithstanding possible changes in the utility of war and the nature of the potentially warrior modern society, it is incorrect to suppose that anything so fundamental has changed as to affect the necessity of war, as a mechanism, despite the possible consequences.*

Important corollaries of this viewpoint were expressed in two striking comments:

"Regression is as much a part of history as is progress. There is nothing philosophically impossible about the devolution of society, as opposed to its evolution, so there is no reason to believe that wars cannot happen just because they don't make sense."

and

"If one takes the hypothesis that war is no longer feasible seriously, how does one live in modern society?"

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In summarizing the threads of the discussion, it is useful to group the elements of consensus and dissent into three categories, recognizing at the outset that the role of the rapporteur requires a certain amount of categorization and labeling where neither device was explicitly used by the participants. The discussion developed insights and perceptions which addressed the—

- Effects of War as an institution; the
- Effects of modernization as a process; and the
- Effects of national policies and postures on the continuing problem of dealing with war in the modern society.

The complex notion of the "modern society," in the sense that Ambassador Underhill and Marion Levy use the term, does indeed indicate a certain fragility, when faced with the prospect or the threat of the kind of destructiveness possible in modern warfare. Instead of foreclosing war's usefulness as a coercive device, this suggested to some that precisely because of the fragility of modern society and its vulnerabilities to disruption, the threat of war has a continuing and profound utility within such societal groupings. Nuclear warfare, moreover, has made the threat of war more meaningful and "reachable" to a larger portion of the international society, insuring that the potential ravages of war are now extendable to distant states and protected homelands. While war has always been objectively "disuseful" and rarely popular, the objective has been to somehow "get away" with war and capitalize on its potential. For the very reasons cited by Ambassador Underhill, this potential for disruption is greatest in the more modern societies, a phenomenon which affords the threat of war its greatest usefulness than at any time in history.

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Because, then, war would have a severe impact on modern society—since disruptability is its prime vulnerability—we must anticipate not only more war and the threats of war but new forms of warfare as well. In the case of Japan, for example, it is precisely because of its internal complexity—its inability to be run by any but the Japanese—that the threat of internal chaos is coercive. This has particular cogency to subnational groups—the men with the “bombs and guns”—who can now disrupt not only such single societies but the entire world order of which such states are key and integral parts. This is a worrisome factor, to the extent that it is consummately “undemocratic” and makes the system highly responsive to narrow, single-issue, nondemocratic forces. By the same token, we are soon to see a complex economic society highly vulnerable to the use of economic warfare, and an interlaced and interdependent world order facing technological and psychological challenges to its essential structures as well.

Similarly, unthinkable as it may be to some, prudence demands that we investigate and learn all we can about strategic nuclear warfare. The coercive “value” of the threat to use nuclear weapons will remain, despite the disarmament initiatives and successes in any of a number of optimistic alternative future scenarios. If the bomb is banned, a high premium attaches to the last one left.

To the objection to this line of reasoning that war, since Alamogordo, instead of serving the nation-state system as its conflict resolver of last resort, has now become potentially destructive of the very parameters of the system itself, some ask “So what?” At Melos, this same line of reasoning had so little effect on the decision of the Athenian generals to utterly destroy the Melian society as to provide useful food for modern thought.

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What then is the nature of the implied link between modernization of society and the decline in the utility of war? Who perceives such a link? Does such a linkage result in any outwardly perceivable change in the perceived role of war in modern strategies?

Some argued that as modernization increases, consumption increases and leadership has far less flexibility in meeting demands, particularly when high consumption rates require conflict to acquire things to consume. Again, as modernization is fully achieved, the potential for mass communications to "pervert and distort perceptions, motives and intentions" further limits the inhibitions placed on warfare by the more benign aspects of modernization. The logical outcome of this argument was expressed in the thesis that war's utility and, hence its probability, is increased by modernization, particularly at the margin, where the mere threat of great conflict and the use of such threats to coerce could easily lead to the event of war itself.

It may be incorrect, the participants agreed, to assume that the thrust of history is evolutionary toward higher values. During the Golden Age of Pericles and at the height of the glory of the Roman Empire, few envisioned any alternative futures not involving further utopianization of society toward higher refinement levels. History, however, is replete with accounts of devolving societies; and devolution, rather than progression, is by far the more common process in history. In view of the modern appreciation of current values, we may well be experiencing the kind of complacency which characterized the Athens of Pericles and the Rome of the Caesars. With *common*—as opposed to *shared*—international interests, modern society may be simply unable to refrain from coercion and its ultimate result, conflict. The conclusions with which one is left tend seriously to suggest that modernization, as a process, has but a feeble impact on the prospects for war.

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Grace notes and glosses on the orchestrated theme were provided by a series of observations which tended to illuminate perspectives during the unfolding of the central theses outlined above.

Both Levy and Clausewitz were "bourgeois" in the sense that they represented the class of "people who had to do the fighting," for the kingly class which profited from war "had others to do their fighting for them." The price and pain of war has increased but the role of the king has diminished. The existence of rival systems of authority has perpetuated the usefulness of war, despite these "bourgeois" conceptual frameworks.

On the other hand, in Western societies leadership and representation are becoming more closely identified; the leader must "represent" the aspirations of the people before he can "lead" them. Hence, in the American idiom, the utility of war must be brought home to the mother in Peoria who is being asked to give up her son before support—and hence, feasibility—can be assured for war. This *is* a feature of modernization, particularly in the West, where the increasing failure of the "bourgeois" to render such support increasingly inhibits the actions of states in war and makes the public thereby less available for mobilization. Social and ethnic cleavages, once cemented by "leadership" and held together, must now be factored into the problem of achieving the support for war which is so essential to its feasibility.

Despite this constraint and the philosophical cogency of the proposition that war is seemingly no longer useful to the global superpowers, there *is* a requirement to preserve the national security interests of the nation in the face of threats and conflicting interests of states who view war differently. Such a situation makes the decision to prepare for war and to harbor a "military-industrial complex" a rational one and the decision, when it must come, to use force a rational decision. The implication for modern "leadership"

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would seem to be that the translation of this rationality to the "people who must fight the war" is both a serious responsibility and a continuing challenge.

The Prospects for Conflict (1980-2000)

2

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Few intellectual endeavors are more fraught with hazard than those of the "futurist." One would assume that the hazards of peering into the future are so well known as to discourage all but the stout of heart or those so institutionally faceless as to be insulated from the righteous protest of contemporaries who have been persuaded to carry umbrellas on a sunny day.

This paper is an attempt to identify the underlying trends in international society which have the potential to provoke violent conflicts in the last two decades of this century. Whether one projects, forecasts, or predicts the impact of these trends and their magnitude and direction over time, such hazards must, at the outset, be squarely faced.¹

There is, first of all, the implicit but damaging assumption of chronological isolation, common in the literature, which ignores or neglects to consider the future as part of a continuum which began in the past, taking the "eighties" to begin precisely on January 1st, 1980, and ending on the last midnight in December 1989. There is, conversely, the opposite danger of conceptually leapfrogging the present into the decades ahead unchanged, or mirror-imaged (or to anticipate the future backward into the present).²

There are also dangers in attempting to be overly specific about the future, but oversimplification can lock out from a conveniently constructed conceptual framework a great multitude of eminently plausible phenomena because they do not "fit" into a future labelled "multipolar," "maximum growth," "no growth," etc. Overcompensation prompts the unwary futurist to cover all bases, meet all threats, counter all challenges and remove all risks in his work, without acknowledging his own role as a risk-taker of the first order, whose charter is to separate the possible, the probable, and the likely from the universe of the

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conceivable. Finally, the futurist needs to be chary of projecting the normative values and operational objectives of the near present into the years ahead as immutable philosophical givens, or, conversely, assuming entirely new normative structures irrelevant to and disconnected from current values.

We will be looking, then, at an international political landscape some years ahead in a not-too-distant future, many of whose features are readily recognizable and even familiar. We shall try to explore this landscape to evaluate the potential for violent conflict.

The kinds of conflict we are talking about are those which affect the defense and security of the body politic, and particularly of the United States. Noah Webster's view of conflict as "competitive or opposing action of incompatibles" must be modified to accept a notion of conflict in terms of such opposing action aimed at enforced modifications of national policy and, ultimately, national behavior. As we shall note presently, such opposition need only involve incompatibility in an issue-specific sense at least at the outset, given the web of interdependencies already characteristic of the behavior patterns of modern states. Where interest-specific incompatibility ("Taxation without representation is tyranny," "Fifty-four Forty or Fight," "Remember the Maine") pervades the formulation of national process concepts—the way states go about their business—and affects total national outlooks, the potential for the kinds of conflict which may lead to violence is present.

Herman Kahn's "escalation ladder" demonstrates that our notion of conflict is, at its earliest and most benign stage, identified popularly as *ostensible crisis*.³ At the lowest of Kahn's 44 rungs in the ladder leading to "spasm or insensate" war, the players perceive the potential for conflict and the crisis derives its essential flavor from the perception of the parties that subsequent rungs of the ladder will be "climbed" unless the dispute is quickly resolved. One might say that our concept of Cold War involves a more or less chronic condition of ostensible crisis, characterized more by an attitude that the chronic could easily become acute than by any clearly defined opposing action, in the Webster sense.

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It may be useful to begin by proposing five basic assertions or axioms which characterize fundamental realities in the international environment. These axioms relate primarily to the United States-Soviet relationship, by far the most significant factor in the long-term strategic outlook of the perspective of today.

—While there are cooperative aspects of the relationship between the United States and the Soviet Union, the essentially competitive elements of that relationship, with the attendant risk of conflict implied by this competition, are likely to endure.

—From the basic dissimilarities in the strategic and geopolitical outlooks of the United States and the Soviet Union flow fundamental asymmetries in the political, military, economic, and ideological strategies each will pursue in the decades ahead, and these asymmetries will govern the relationship of each with other nations.

—The United States holds significant and long-term advantages over the Soviet Union in most of the traditional non-military elements of national power, including economic and technological potential and the psychological appeal of the tradition of Western democracy. These advantages are apparent to a great number of smaller states.

—There is an increasing number of issues in international relations to which the relationship between the United States and the Soviet Union is not centrally relevant. The United States has important interests which derive from values external to this relationship which may require unilateral actions outside the framework of global power interaction, although not necessarily irrelevant to it.

—Despite rough equivalence in the broad assessment of military capability, Soviet power is growing and other power centers are emerging which must be accounted for in the long-term calculus of geopolitical, economic, and military power relationships in the future.

There are, of course, other relatively self-evident statements one might make to describe the fundamental realities of the international environment from the viewpoint of other states. One can easily conceive of a listing of axioms describing the strategic outlook of the Israelis, or of the Saudis or South Africans. It can be argued, however, that for the purpose of attempting to identify long-term trends which have the potential to provoke violent

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conflict in the decades ahead, the *interactions* of these separate strategic outlooks with those of the United States and of the Soviet Union are of primary significance. Thus, the US-Soviet relationship will remain a principal axis of international politics; this relationship is the principal feature of the international landscape ahead, despite the fact that there are equally likely features—the North-South relationship, the international energy balance, the problem of access to resources, the conflict of ideologies, ethnic animosities, economic conflicts, potential revolutions, irredentist claims—which must be taken into account in this context.

There are changes in the interaction patterns of states suggested by all this. One might propose another set of five patterns or families of trends which might suggest potential change in the decades ahead.

Trends in International Interaction Patterns

We begin by noting that, of course, power interaction is an essential ingredient of conflict and that conflict is a possible outcome of any interaction. This is not to propose that conflict occurs wherever or whenever power interacts; only that economic conflict, for example, is difficult to imagine without the thrust of competing economic systems or policies interacting in opposition. Violent conflict, by definition, involves some interaction of military or paramilitary force, although at any particular moment in the "play" of such conflict—the surprise bombing of undefended cities or the blitz invasion across an open frontier, for example—military power need not be operative on both sides at all interfaces. And because violent conflict is universally the outcome of other elements of power in interaction—political, economic, psychological—we can suggest some trends in international interactive patterns which may be helpful to explore to appreciate more fully the potential for future violent conflict.

—**The arenas of power interaction are changing.** Traditional arenas of power interaction still operate. Diplomatic intercourse, international assemblies, world markets, national frontiers, the world's oceans—these are among the traditional functional and geographic arenas in which power interacts and it is impossible to imagine a drastic decline in the relevance of any of them. But

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we are just beginning to be able to envision new geographic and functional arenas in which abrasions and interchanges are possible, along with some changes in the relative frequency of such interactions in the traditional form. For the United States, for example, far less meaningful power interaction occurs in the United Nations than it did in 1950 or in 1962, although with the huge growth in its membership since the early 1960's, a truly significant change in the nature of that arena has occurred. Properly considered only as "issues" today, we can anticipate the emergence of the seabed and the continental shelf, inner and outer space and transnational data exchanges as possible functional arenas for power interaction in the next two decades. Geographically, Zambia, Socotra, Baluchistan, and Shaba may soon be as familiar as the arenas in which power interacted in earlier periods—Berlin, Quemoy and Matsu, Panmunjon, Budapest and the Golan.

—In these new arenas, new forms of power are emerging. There is a new form of economic power abroad in the petrodollar, to say nothing of the added value of a whole panoply of currently scarce resources which have become the equivalent to traditional forms of international power, ranging from sweet Indonesian crude to American winter wheat to Zairian uranium. More importantly, the ability to process data rapidly, to package technology and to orbit it, to deliver ordnance with high precision at great distances, to conduct real-time surveillance of the inner heartland and the open ocean, to destroy hardware with atomic and sub-atomic particles, to squeeze additional hydrocarbons from long abandoned wellheads—these represent a new dimension of national power packaged in the form of technology. At the same time, the ability to create urban unrest, disrupt the fabric of established society, and galvanize public opinion abroad also represent recast forms of power. A traditionally inward-focused Soviet Union has become a major global maritime power. The coffee, bauxite, and nuclear materials exporters are showing newly self-confident international entities, demonstrating the synergism of cartelization, following in the steps of nations unheard of a generation ago—Abu Dhabi, Qatar, and Kuwait. The ability to transfer instantly huge assets across borders and to constitute a force in the internal politics of a host of industrialized nations represents, in the case of the multinational corporations, still another new form of power abroad on the globe. There are bound to be others in the decades ahead.

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—The configuration of power relationships is changing. The commonality of threat perception which motivated the containment alliance of the past generation is, in general terms, eroding. While NATO endures, as the geographic focus of imperiled interests and the forum in which countervailing power must be met shifts toward those autonomous, non-NATO areas in the Middle East, sub-Saharan Africa, and the Pacific, alliance partners can be counted on to take positions driven by motives quite irrelevant to the containment of Soviet communism. Other examples abound, signalling a far more flexible and fluid configuration of the main power relationships than those with which the world had grown accustomed in the decades past. Partners on one issue frequently find themselves on opposite sides of other issues. A Sino-Japanese treaty, an Egyptian-Israeli peace pact, the Cuban presence in Angola, the proven oil reserves in Mexico—even a Polish Pope—are all points to ponder. In functional terms, this reconfiguration of traditional power systems finds competition, cooperation and interdependence coexisting at different interactive levels with North-South, East-West, and have-have not dialogues providing the background music. Even low-order conflict has changed, due largely to the multiplication of surrogate relationships, arms transfers, and the new dimensions of the forums of interaction brought about by new forms of power operating in these new configurations. To cite one practical example, low-order conflict is no longer necessarily synonymous with low-threat conflict, given the proliferation of high technology weaponry now in the hands of relatively "insignificant" states and assorted subnational groups who enjoy the patronage of the major powers.

—New interests and objectives are emerging. President Carter's overseas trip to Venezuela, Brazil and Nigeria exemplifies each of the preceding pattern changes and demonstrates a new articulation of national interest in much the same way as Hua Kuo-feng demonstrated in Belgrade and Bucharest. The interests of the great powers can only become more complex, and with complexity and the growth in the relative power positions of the less-than-great powers, we can expect power interactions to take place at an accelerated pace and in a greatly expanded range of functional and geographic arenas. Great powers will continue to try to act like great powers and power and its balancing mechanisms will retain traditional

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positions in relative value scales. But as the configuration of these balancing mechanisms assumes a more fluid and more complex form, the great powers are likely to perceive increased value in the maintenance of the basic system itself. Four additional categories of expanded interests come readily to mind; there are others. Space interests are bound to become a part of the calculus. Access to proportionally greater shares of the world's limited resources and the geopolitical arrangements necessary to insure that access are others. While the world has seen a decline in the influence of religion and ideology in the behavior of states, there remain a number of such intangible interests unfulfilled which cannot be neglected without denying the course of history.

—All of the previous observations prompt a final suggestion that traditional strategies are facing a wide range of new challenges. As the global energy, food and technology balances become better understood, increasing demands and the broader question of total resource allocation will impact differently on modern, modernizing and pre-modern societies. Expenditures for security and defense, nuclear proliferation questions, modernization issues—even such issues as human rights and immigration policies—are likely to suggest revisions of strategies with long-term evolutionary—or perhaps, revolutionary—effects. Within present societies, internal forces for change, now only dimly understood, have the potential for causing major modifications to the traditional patterns of international behavior.

At the same time, societies will be emerging in new forms as a result of these internal forces, most likely in the Persian Gulf, in Black Africa, and on the Asian continent. The geostrategic importance of these regions demands that each of the other members of the "system" accommodate to what may represent truly radical change. The desire for the "better life" in Eastern Europe, for political modernization in traditional societies and for a brake on such modernization in Iran, for linguistic autonomy in Quebec, for a return to the more humanistic values in Japan, for "modernization" in China and even the "taxpayers revolt" in the United States, are all forms of forces which, perhaps inevitably, will make a mark on the long-term strategies of the states so affected. Likewise, human rights, environmental concerns, the use of space, the size of the territorial sea and access to the seabed, and the desire to limit or moderate second

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and third order technology transfers for political reasons, are all bound, as well, to enter into the calculus and affect strategic outlooks.

Finally, with essential equivalence in strategic systems reached, the Soviet Union cannot help but feel less bound and constrained in its international behavior, for whatever purpose. With parity reached, the Soviet Union senses a growing freedom to project its presence overseas in ways hitherto inconceivable, and is limited only by the mechanics of logistics. Equivalence is likely also to essentially affect the behavior of the Soviet Union with regard to the Eastern European nations as well as its relations with the Third World, and to encourage basic changes in Soviet geopolitical options in the Persian Gulf, Northeast Asia, and the Mediterranean. For the United States and other preservers of the status quo, the challenge to their strategies for the next two decades is only dimly perceived at this writing. The possibility of drastic, unpleasant but inevitable changes in our way of life must be squarely faced.

Conceptualizing the Future

If we try to conceptualize the kind of future to which all this leads, we would probably have to admit that there are basically only a limited number of alternative futures possible. We can postulate at one end of a spectrum a future dominated by a single cataclysmic event signalling the end of the nation-state system as we know it. This would be an alternative future which would be necessarily short, but as a continuing condition of mankind during the rest of this century *War*—particularly between the nuclear powers—seems less likely than it did two decades ago but seems, to many, somewhat more likely than it did one decade ago.

War is possible at any time during the period, however, as a result of miscalculation, accident, or irrational behavior. It is more probable at the local, regional, or limited level than at the general or global level and still more probable between smaller states acting as surrogates for the great powers or on their own behalf. Axiomatically, conventional war is more likely than nuclear war and insurgencies, brush fire wars, and chronic

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paramilitary operations involving subnational groups are more probable than limited conventional wars involving the commitment of large ground forces of the nuclear powers, although "total war" between states in the Middle East and in Africa is certainly conceivable.

A second alternative future—*Cold War*—could involve tensions, regionally or globally bipolarized on grounds involving the entire span of conflicting interests which any pair of states could find to acerbate the relationships between them. Cold War—after the model of the free world-communist Cold War of decades past—is far more possible than sometimes imagined. A change of leadership, a radical shift in the balance of power, or a Sino-Soviet axis could effect such a reversal. The behavior habits of the two principal actors in the Cold War of the postwar generation are not easily forgotten. Other tensions, on a nonglobal scale, are more likely and seem indeed to be in the future. The Arab-Israeli relationship, to cite one example, and the Sino-Soviet relationship to cite another, have great potential for endurance. Trends toward normalization of both pairs of relationships are sometimes evident, but the continued existence of friction and discord is far easier to predict than is the opposite.

International tensions—Black African States against South Africa, Iran against Iraq, India against Pakistan—these and others are in fact likely to persist. There is an additional possibility that great power involvement in these tensions could evolve and significantly upset the interplay between other states in pursuit of their own interests. A US-Japanese trade war could easily evolve into a period of major tension, as could a European Economic Community-Japanese dispute, erupting beyond commercial disagreement into a wider range of politico-economic conflict.

Detente is also possible, the relationship between the formerly hostile principal powers characterized by the understanding that recognition of each others' "legitimate" aspirations contributes to the stability and well-being of the entire system. This future would not be without its political abrasions, but each of the powers would accept political, economic, and—where applicable—military deterrence of open confrontation on major issues, and work within a framework of diplomatic negotiations. A world of complete detente in its pure form is manifestly

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impossible over the long run, but just as war and tension may from time to time prevail, so might a detente defined in different ways by the principals as the international environment—and the climate within that environment—tends to become more benign. A future characterized by detente, on the other hand, may not be a completely optimistic prospect. The danger in complete detente is the danger associated with free political enterprise, where the important status of Western Europe and Japan to the United States would become sublimated in a system in which Western Europe and Japan enjoy the same relationship with the Soviet Union and with China, respectively, as they do with the United States.

Entente, unlikely but vaguely possible, involves the concept of world law, characterized by significant, large scale transfers of sovereignty to a supranational authority created by the members of the system to keep the peace. Under such a world arrangement of power, each of the great powers would by formal treaty surrender the right to engage in armed conflict unilaterally and individually and give up a major element of sovereignty in the forfeiture. This situation could come about through a growth of functionalism on a worldwide basis. It could eventually encompass all of the functions of the traditional state system by an expansion of regionalism with a corresponding decrease in nationalism, or by the creation of a new world government distinct from current world organizations.⁴

We come then to a future which will probably contain elements of each of the possible alternatives, a smattering of wars, continued chronic tensions, occasional glimpses of detente and a few overtures toward continuing the trend of sovereignty transfer exemplified in the heretofore spotty record of world organizations.

It is neither a lack of courage or a lack of vision that suggests, then, that the world basically will be pretty much the kind of world we have been used to; but one of its constants remains its potential for change.

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Potential Destabilizing "Event Chains"

Several years ago, William Overholt of the Hudson Institute proposed a series of unpredictable events which he described as "turning points in world history" out to the end of the century. The fact that almost half of these turning points have already been reached emphasizes the rapidity with which change is occurring. Borrowing slightly from the informal Hudson work to suggest as yet unreached "turning points," the following examples might be useful to demonstrate the potential for violent conflict suggested by what has been discussed to this point.

At the risk of being accused of a fixation with pentagonal relationships to which observers of the Defense Department will immediately ascribe Freudian overtones, let us now propose that there are at least five categories of event chains which have the potential to destabilize international affairs in the decades ahead and bring the international community to the point of violent conflict. The first three of these categories are, in a sense, causal; the last two are resultants. Difficult as it is to separate cause and effect in an analysis of the interactions between states and forces, it should also be noted that the possibly unlikely but important events catalogued below could occur with varying degrees of simultaneity, complicating the calculus of their potential impact and exponentially raising the risk of attendant conflict.

—A major change in the strategic relationship between key international players attendant upon a technological breakthrough. The dawn of the current era of the strategic relationship between the United States and the Soviet Union began with the explosion of the first Soviet atomic bomb, just as the explosion of the Alamogordo bomb in July 1945 dramatically changed the American strategic posture. Current strategic relationships would be similarly and possibly even as significantly changed by the attainment of a proven capability by any major state to effectively neutralize strategic retaliatory capability. This could come about in any number of ways singly or in concert. Development and deployment of a foolproof acoustic or, better, nonacoustic, anti-submarine detection system is one way. Another would be the development of an effective antiballistic missile capability, or any of a number of other technological feats which would have the effect of rendering strategic weaponry useless. The deliberate

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destruction of another nation's satellite; a demonstrated potential to inflict massive casualties without the use of nuclear weapons with a chemical, biological, or some hitherto unthought-of lethal agent; a capability to exploit effectively guidance system vulnerabilities of missiles in silo before launch; a massive nuclear development program by one of the "nth countries" utilizing high technology and sophisticated employment concepts; or the attainment of a credible nuclear capability by a subnational group, such as the PLO or the IRA—all of these could so materially affect the strategic relationships currently extant as to signal a turning point toward the kind of destabilization which would render the prospect of violent conflict more likely.

—A major change in a regional power configuration by violent action. We need only to recall that the *Anschluss* and the "Greater Southeast Asia Co-prosperity Sphere" were simply attempts to make a major change in a regional power configuration, to appreciate that the future is bound to have an enormous commonality with the past. In the decades ahead, potentially violent opportunities to realign regional power relationships are relatively easy to envision. Some may be replays of age-old motivations, as on the Korean peninsula, in the Middle East, in the craggy lands of South Asia stretching from the Persian Gulf to the Gulf of Siam, and in any of a dozen strategically important regions of the world containing premodern and modernizing societies for which territorial conquest retains some primordial value.

But there are some other considerations which apply under the rubric of regional power configurations which may have a more distinctly futuristic twist. In the near term, a Soviet "stabilizing" action in either Yugoslavia or Iran would be potentially fraught with the greatest danger of violent response. The political disintegration of India, Indonesia, or of any other fractious, pluralistic states comprised of diverse ethnic, linguistic and religious communities which have achieved union over historic enmities, followed by an outside state attempting "stabilization," would have the gravest of consequences. Similarly, a major change in a regional power configuration such as NATO or the Warsaw Pact is conceivable, caused not necessarily by externally applied violence but by internal forces which have been galvanized to the point of successful restructure of current political regimes. The dissolution of the ruling center-right majority in Italy as a result

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of urban guerrilla action with attendant impact on Italian defense policy is unlikely but not preposterous. Neither is a successful revolution by a Warsaw Pact nation; an internal upheaval reversing the political orientation of Iran, Iraq, Syria or Saudi Arabia; or a palace coup in any of a number of resource-rich, strategically important states which would cause severe difficulties for certain other members of the international community. The important point here is that *regional balances* have become so important because of these resource and strategic considerations that the number of "other members of the international community" affected by these balances is increasing rapidly.

—A major change in the international economic balance.

The recent experience of the industrialized West and the developing Third World with the havoc caused by the 1973 oil price upheaval is too vivid a memory to be discounted as a third cogent scenario for potentially violent conflict in the decades ahead, and we probably have not seen the end of the impact this event has had on contemporary *power interaction*. There are some who see the eventual breakdown of the capitalist system having its root cause in this event, and indeed, a breakdown in either of the major competing systems would spawn the possibility of violent conflict. Economic cataclysms tend to sow the seeds of conflict and few modern scholars can overlook the impact of the Great Depression of the 1930's on the origins of World War II. With the potential for economic destabilization just beneath the surface of such issues as the world food balance, expanding populations in the Third World (and elsewhere), the scarcity of energy resources, and the geostrategic considerations involved in assuring access to them, economics may dominate the national security outlook of an increasing number of states in future years.

There are other considerations as well. Disintegration of the European Economic Community or its communist counterpart, CMEA (Council for Mutual Economic Assistance); a major technological breakthrough in the achievement of energy sufficiency reversing the current dependence of the industrialized world on energy imports from premodern and modernizing societies and with it, the international financial balance; political accommodation by a bankrupt importing nation precipitating a reversal of alliance orientation; and the emergence of an international requirement for a "new" resource or a major find of an "old"

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resource (pitchblende in the Congo in 1946, oil in Mexico in 1978) could conceivably initiate a chain of events with severe international repercussions. Finally, one must seriously ponder the potential vulnerabilities of the current "free world" economic system, with its growing imbalances, to a Soviet controlled manipulated scenario in which these vulnerabilities are effectively exploited to bring it to ruin.

—Major changes in the interests and objectives of key international players. We are currently witnessing what appears to be a wholehearted attempt by the People's Republic of China to "modernize," a recent reorientation of interests and values which flies in the face of the pattern of the past few decades. It is possible to conceive of other major changes in interests and objectives which might be precipitated either by events falling into one or more of the three categories noted above, or precipitated by any of a great number of other factors such as a drastic change in leadership, an internal misfortune or bonanza, or simply by evolutionary reevaluation. A major nuclear accident, an environmental catastrophe, or any of a number of natural events could dramatically transform currently acknowledged interests and objectives in virtually any current society.

These changes need not necessarily have the potential for provoking eventual conflict, to be sure, but it is worth thinking the problem through. The problem of the irrational leader whose value judgments are similarly irrational ("China could afford 100,000,000 dead . . . and be better off for it") is not necessarily a benign one. Nor is the problem of a suddenly xenophobic current ally, the prospect of Japanese abrogation of the US-Japanese defense treaty, Soviet abrogation of the SALT agreements, an expansionist Vietnam or Morocco or, for that matter, Bolivia. What of a rabidly isolationist United States? What of a resurgence of German militarism? What of the potential for nuclear blackmail by India or, in the future, Brazil or Israel or one of the Koreas? And in what category of benignity can we place the "salutary" thrusts of policy which place renewed and visible emphasis on human rights and limiting proliferation and any of a number of other conceptually valuable ideals? Do such policy initiatives contain within them the possibility of creating abrasions with former allies and clients who cannot, without great reluctance and the forfeiture of far more of their freedom of action than they would prefer, accede to the realities implicit in such changes?

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—Finally, major changes in the strategic outlook of key international players. There are many who point to the recent expansion of the Soviet capability for maritime projection as the inevitable accoutrement of great power status. Regardless of its inevitability or its origins, the change signified by the Soviet attainment of a "blue water" naval capability has significant strategic overtones, most of them more rather than less likely to provoke violence. While it is difficult to conceive of, say, a Chinese Caribbean Fleet, in the 1980's and 1990's, it is less difficult to conceive of a violence threshold lowered perceptibly by a more bellicose Iran, Israel, Taiwan, or Vietnam generating regional instability with almost inevitable great power interest. The Soviet Union will almost certainly refine its own strategic outlook as Soviet military capability increases in comparison to its traditional competitors, the United States and China. So, almost certainly, will other states heretofore considered less central to the calculation of the international strategic balance. The activity of the French Navy in the Indian Ocean currently constitutes the largest single naval effort in that region; it is not farfetched to conceive of expanded interest by other "second world" powers in other regions as well.

Similarly, there are many commentators who feel that it is simply a matter of time before the Japanese will take a more active role in their own defense, particularly a maritime role, protecting their extended sea lines of communication and assuring the continued availability of the petroleum imports on which the Japanese so critically depend. There is bound to be some change over the next two decades in Middle Eastern and Iranian strategic outlooks, partly because of the changes likely to occur in the Arab-Israeli relationship and partly because of the changes in Iran's perceived role as protector of the Persian Gulf and western Indian Ocean. Soviet and Soviet surrogate activity in South Asia and in Africa south of the Sahara is similarly likely to affect the strategic outlook of other nations whose interests this activity putatively affects, nations such as Tanzania, the Sudan, Pakistan and India.

Political change in the Maghreb; the question of Spanish claims on Gibraltar; long-term prospects for continued upheavals in Cambodia; newly profitable seabed claims on the part of Norway and the United Kingdom; the potential for oil extraction from the continental shelf adjacent to China and Vietnam in the South

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China and Yellow Seas (and in the waters around the Senkakus); the utility of such sites as Socotra, Berbera, Andaman, Nicobar and Diego Garcia to non-Indian Ocean states, including the United States; and Panamanian sovereignty over the Canal—all these are likely to precipitate nuances of change in the way some states perceive their long-term interests and suggest the adoption of objectives designed to maximize these interests.

We come then, full circle, to the futurist as a merchant of change in an environment of intellectual hazard. We have attempted to scope the parameters of such change but, more likely, have probably succeeded in demonstrating to the believer that change is more likely than not, and to the skeptic that such hazards are real; that the things we are currently unable to imagine are precisely those things which will cause us most grief; and that in its role as the dwelling place for change, the future is bound to resemble the past.

Were such a Delphic pontification allowed to stand as the principal thesis of this paper, however, it would resemble any of a number of more elaborate set pieces (one of which recently presented a probability density algorithm to demonstrate that, indeed, change was inevitable, but not an *awfully* lot of change).

Instead, to conclude on a note which might stimulate further discussion, it might be useful to reexamine the axioms relating to US-Soviet relations which were listed earlier and to place them in the context of what we have said about potential change.

—If indeed there are both competitive and cooperative aspects of the US-Soviet relationships, at what point does it become so imperative that we emphasize the cooperative over the competitive and subordinate perceived national interests on some issues for the sake of avoiding violent conflict?

—Do the essential asymmetries in the outlooks of the two major powers which govern their relations with other states preclude this kind of emphasis on cooperation or have the competitive aspects such a dynamic of their own that armed conflict may be inevitable?

—Are the long-term advantages of the United States relevant enough to the relationship to be able to prevent disruption of the complex balance currently existing between the United States and the Soviet Union, or are these advantages likely to erode to irrelevance?

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—And if there are an increasing number of issues to which the US-Soviet relationship is not centrally relevant, do they have the potential to precipitate violent conflict between the United States and another state or coalition of states? Could the Soviet Union become similarly involved with such peripheral, but still significant, issues?

—Finally, is the potential for violent conflict less likely if the relative ascendancy of Soviet military power is “allowed” by the United States to continue or is there a risk—high, medium or low—of destabilization inherent in the continuation of current military postures, national strategies, and security alliances which constitute the global and regional military balances in areas of key interest?

Discussion on The Prospects for Conflict (1980-2000)

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—The relationship between the United States and the Soviet Union is central to any discussion of the prospects for conflict during the remainder of the century.

—The Third World is the principal arena in which the elements of this relationship pose the greatest potential for conflict.

These two themes dominated a discussion which began with general assent to the first of these propositions and which ended with an agreement to disagree on the:

fundamental characteristics of the relationship; the

perceptions of this relationship in the Third World itself; the

nature of the US role in modern international society, and, still unsolved, the

utility of military power and its use within the parameters of that society.

At the outset, the thesis was advanced that the conventional appreciation of the "Soviet Problem" is less and less relevant to the more trenchant problem which is, in the view of one observer, that future conflict is bound, almost inevitably, to occur "not in a central place." While a military confrontation along the NATO-Pact "front" would elicit an adequate and effective US response, the most significant new element of Soviet power—the ability to export "chaos by air-lift"—has become their most important strategic weapon for the decades ahead. Where then, is the

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"main war" to be fought? Pointing to the recent chaotic events in Nicaragua (easily exportable to the rest of Central America in the next two decades), in Iran (similarly exportable to the other Gulf States), and in Libya, Ethiopia, and Central Africa, the proposition was advanced that an unholy alliance of peoples antagonistic to the values of the Western World is taking shape and Soviet access to that alliance in a central, provocative, and calculated way provides a cogency to the prospects for conflict which cannot be ignored. The relatively "simple" issues of the debate on defense resource allocation are woefully irrelevant to the kinds of programs needed to forestall such conflict—programs in communications, development, and nonmilitary assistance which are "complex," but necessary, first-step approaches to the problem.

But if the Soviets are counting on a strategy based on the exploitation of unrest, what are the implications for the United States in terms of its own commitment? The answer to this question, an important one raised by the chair, must depend on the understanding first, that the Soviet Union intends to exploit unrest rather than initiate it and, second, that the Soviet Union perceives an overwhelming net advantage in such exploitation. That established, it is imperative for the United States to identify first the degree of Soviet involvement in internal or regional chaos of the kind mentioned and then meet it *on that level*. The ultimate imperative is such that just as the United States stands apparently ready to engage in "conflict," if required, in the strategic nuclear and conventional warfare areas, it must somehow develop the will and the wherewithal to engage similarly in this new arena—"interference warfare."

To the objection that such a categorically gloomy world outlook neglects to address whether the problem is the Soviet Union itself or the chaos such a strategy could provoke, the

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answer suggested *neither* independently, but *both* in the near term. In the long term, the ultimate worst-case scenario would be a number of regional economic and military power centers, implacably inimical to the West generally, and to the United States specifically, with whom competition is virtually impossible. The independent danger, in the decade of the 1990's, of a number of vastly more powerful regional power centers is a point to ponder.

What can we do about it, given the current post-Vietnam outlook of the United States? Is force relevant to the problem and is the kind of forecasting attempted in the paper relevant at all to the real national security policy questions?

Two sets of forecasting alternatives were suggested. Perhaps, it was argued, the best the forecaster can do is to "forecast a range of forecasts," constructing a "cone of probabilities" with the apex of the cone at the present and an ever increasing number of possible forecasts extended out into the future. Precisely because of the mutual exclusivity of these possibilities, moreover, one must take great care to derive policy suggestions "within the cone" which are non-specific. Indeed, the general strategy of a business corporation operating in an analogous climate of a field of aggressive competitors is one of *hedging*, where one "bets against oneself" with a certain number of one's chips when faced with a future equally likely to go any one of a number of ways. But will modern international relations come to resemble a business environment in a sufficient number of ways to make such an analogy useful in the policy-planning context?

A major theme of the discussion was introduced incidentally to a suggestion for a second forecasting alternative. In looking at the future from the perspective of national security policy alternatives, we might do well to adopt a somewhat different framework than the one proposed in the paper. Addressing the whole

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issue of "interference warfare," one participant suggested that we look at the landscape of the future in terms of its inevitabilities, its pitfalls, and the options they suggest. In expanding on this theme, he noted that several elements which have characterized our reading of contemporary security issues may be misleading us in this effort. We have continued to operate on the basis or assumption of some "grand design" in balancing Soviet power; we have viewed ourselves as the "prime actor" in this balance; and we have developed our appreciation of the Soviet threat only through its primarily military, external manifestations. In so doing, he contended, we may have locked out of our considerations the fact of the rising power of second-rank countries (French strategic nuclear capabilities are only rarely factored into the equation); the rise of third countries in regional power configurations, up to and including incipient hegemonies (Vietnam); and the potential for the rise in what he termed "internal nationalisms" to turn low-order regional conflicts into high-threat holy wars fought with modern destructive weapons or, alternatively, to perceive the essentially destructive nature of Soviet actions and to drive out Soviet presence.

This participant proposed that we no longer consider ourselves as the prime agents in countering Soviet exploitation strategies but that we, instead, acknowledge and foster a *decentralized* strategy that would capitalize on these "internal nationalisms." Such a strategy would look to local and regional opposition to Soviet exploitation, fostering it, emphasizing the overwhelming relevance of the nonmilitary strengths and psychological attractions of the Western approach, accepting and welcoming competition on a non-military basis.

Thus, the discussion came to address two somewhat contradictory approaches to the separate articulations of the danger of the next decades: the thesis that we must gear up for the initiative in active "interventive warfare" and the

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opposite thesis that a natural equilibrium will eventually be reached as a decentralized strategy takes advantage of internal nationalisms to galvanize antipathy for the Soviet style of action. Decentralization *should* be the answer, one panelist carefully explained; the opposite, however, has been more often true. Neither Pakistan nor Iran raised the slightest resistance to the Afghan coup, a classic example of what has been discussed, suggesting that something other than the antipathy of internal nationalisms on a regional basis must operate as well.

In attempting to formulate some refined ideas about an appropriate strategy in these cases, the group first came to grips with the objection that our strategy has already been established and that we have made a formal transition from being the "world's policeman" to its arbitrator, exemplified in Namibia, Nicaragua, and the Middle East.

Were we, indeed, ever formally the world's policeman in the same way that we are becoming the world's arbitrator, or did strategic nuclear superiority merely intimate a predisposition to police, *should it have become necessary?*

Is the role of an arbitrator validly in our own national interest? What precisely is this role? If one stops being a dominant power and is ultimately content to arbitrate, one must then necessarily judge *impartially* between friends and enemies. What good, then, accrues to the friend in this case and what value does one put to our friendship?

What must operate, as well as and independent of any doubtful virtue seen in internal nationalisms, is this: we must stop confusing inventories of weapons with the ability to operate outside of one's borders. There is a difference. Instead, some way must be found to rehabilitate the ability—and the will—of the United States, as well as of the regional powers most

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threatened, to operate outside national borders in an increasingly wide range of geographic arenas.

Not so, goes the opposing argument. *The internal situation in those countries targeted by the Soviets is the main ingredient in the potential to thwart such a Soviet strategy. The suggestion is not that we take no action, but that we make a fundamental change in the basis on which any action must be considered.* Prohibitively costly as it is to take military action, particularly in the Soviet backyard in the Middle East, we must develop not a change in national will but a change in our strategic outlook whereby we resist hegemony without either seeking it or giving the impression that we do.

The rejoinder is that the Soviets have "staying power"—they remain where they wish. To displace them, we must either offer other alternatives, e.g., support, or use military force. Our only other option is to hope, without much optimism, that internal reaction against the Soviet "boorishness" will drive them out. Unfortunately, we currently seem to be in a state of paralysis, probably because of our Vietnam experience.

The recapitulation of the argument focused on the paradox implicit in the discussion to this point—the expansion of Soviet power without conflict where the fear of or the potential for conflict offers the opportunity.

We would do better to remove the sources for potential conflict by eliminating, as we can, the causes for exploitation and, as a minimum, develop a national awareness of the importance of the "project" rather than wait for "internal nationalisms" to restore equilibrium. Difficult as it may be to counter the paralysis of national will following Vietnam, the alternative may mean that we will have to wait forever.

What then, is the perception of American will and power and advantage in the Third World where many—if not all—of these "projects" must inevitably take place?

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Our image may be so severely tarnished that few countries prefer to "do business" with us, particularly in the area of military hardware.

One speaker took specific and pointed exception to all that such a statement implied. In the first place, he suggested, the Soviets loom much less large in Third World eyes than they do in our own. The Soviet Union is widely recognized as the world's foremost military power but, with a higher level of sophistication than is generally credited, the Third World appreciates "the things the Soviets cannot do" by virtue of that power. Consequently, the range of US influence in this arena in business, technology, education, data management, and the whole host of skills needed to develop more precisely in keeping with their own national goals is far wider and recognized as far more appropriate. There is, consequently, the "strong gravitational pull" of the United States and Western economic power which the Soviets simply cannot match.

One should not lose sight of the fact that in some cases, Marxist ideology forces the USSR to be drawn into undesirable situations. These often have little to offer outside of the military sphere and it behooves us not to be "drawn in" just because the USSR is under "obligation."

Quite so, agreed another, but the Soviet Union "is in the business of making each of these statements irrelevant." The main line of the Soviets in the Third World is to create situations in which *despite* our nonmilitary advantages over them and *because of* our obvious distaste for military action and the erosion of our will to use it, we are left without an effective choice at all.

Concern over our "image" in the Third World prompted another observer to take issue with the assumption that our "image" was as important as our natural leadership in the international economy. Skeptical of this "beauty contest" model, he pointed out that the whole thrust of the aspiration for development pushes toward the West, and the

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West is far more relevant to this aspiration, both before and during the developmental process. Our strategy must be to capitalize on the fact of Soviet irrelevance to *this* thrust. If a billion rubles can be pumped into military assistance which we cannot match, the short-term situational relevance of such an overture must somehow be demonstrated by our greater ability to capitalize on the area of food, technology, and economic expertise to foster the will of the "internal nationalism," if you must, to make the appropriate choice.

Another saw things in starker terms. He pointed out that, in his view, each emerging "situation" in the Third World has historically involved more than one "internal nationalism" in a contest for power. We must, he maintained, decide to support the "good" faction, harass the "bad" faction, and be prepared to commit the full range of our support based on a judgment of this value. The expected challenge to such a statement was quick to note that we have neither the ability nor the right to make such value judgments and that past experience, if it has taught us anything, has taught us to be "agnostic" when it comes to such judgments. The world is no longer a massive zero-sum game and we must recognize this fact.

In balancing these viewpoints, finally, it was noted that the Soviet Union may not be at all irrelevant to a whole span of other Third World orientations and we may be, in the long term, assisting the Soviets in achieving these goals by a refusal to face up to a very basic and fundamental appreciation of our own values. We do, he insisted, stand for something. We stand for the dignity of man and this has to be the starting point if any of all this is ever going to come out right.

From such an apparently wide span of individual perceptions of the prospects and the causes for conflict, an abstraction of the views of the participants indicated fairly widespread consensus with many of the terms of the frame-

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work created by the paper under discussion. The arenas of power interaction are indeed shifting away from the central containment fronts to the Third World. The ability of the Soviet Union to operate in this arena constitutes a new form of "strategic" power in a very real sense, to which the United States must somehow respond. The configuration of power relationships is, as a result, changing to our disadvantage in ways in which we find it difficult to react, absent a firmer national will that counteraction is necessary. Our own perceptions of interests and objectives and—hence—our strategies, are by no means clear and unambiguous. Discussion of alternatives—an active, interventive strategy or a more passive strategy of reliance on internal self-interest in target countries—tended to generate far more consensus on the nature and likelihood of the threat than on the appropriate approaches to it in the future.

There was significant disagreement on the question of the competitive and cooperative aspects of the US-Soviet relationship, particularly in analyzing long-term Soviet motivations, but the fact of our mutually apposite outlooks in the Third World seems reasonably well established. The relevance of Western power, built on the Western value structure, is recognized, and the Western advantages in the nonmilitary realm are similarly recognized; whether this advantage can endure in the face of a Soviet countering strategy is another issue.

There was disagreement on the relevance of Soviet military power, its interpretation in the Third World, its ability to augment and enhance a strategy of exploitation of chaos and its long-term viability, given an "appropriate" but less visible Western response. There is, correspondingly, a great danger that preoccupation with the "Soviet Problem" could, by default, foster chaotic infringement on our other equally valid interests

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that could seriously harm the United States, particularly at the intersection of US-Soviet relations and Soviet-Third World relations.

Finally, the split between those who are profoundly alarmed at the ascendancy of Soviet military power and those who are less alarmed, but nonetheless concerned that the United States is adequately armed and pursuing rationally achievable objectives, seems not so much one of long-term ends but of means.

How, in the ultimate analysis, does one use power to protect one's interests and avoid the prospects for conflict? Given the uncertain efficacy of the military dimension of power and the uncertain relevance and endurance of the other elements of US power, it is a very difficult question indeed.

Arms, Arms Control, and Conflict

3

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In thinking about the roles of arms and arms control in shaping the future of international conflict, it is conceptually convenient to divide the intellectual landscape into two parts: a set of questions and issues intimately related to the Soviet Union; and another set of problems of a regional or global character, not dominated by the Soviet-American rivalry. To be sure, as Harlan Cleveland, former US Ambassador to NATO, has somewhat whimsically observed, the study of international affairs reveals that "everything is related to everything else, and more so now than before." Nevertheless, some broad distinctions must be offered, if the aim is to understand how military postures and national strategies are likely to affect the prospects for war over the next 20 years. Additionally, the facts of military and political life strongly suggest that, particularly from an American policy perspective, the issues can be most usefully divided into two groups.

The discussion that follows, then, takes up first those issues in which the behavior of the Soviet Union is of prime significance. The perspective offered is that of an American, and the emphasis is on interstate conflict rather than intrastate violence.

The Nature of the Soviet Challenge

No discussion of the significance of the various East-West military balances—at the strategic nuclear level, in Central Europe, in Northeast Asia, or elsewhere—makes full sense unless the nature of the threat posed by the Soviet Union to the West is carefully defined. Yet, after more than 30 years of extensive and intensive debate in the United States and, to a lesser extent, in Western Europe, there is no consensus as to the definition of this threat or how to meet it. Indeed, in the United States the debate

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over the nature of the Soviet challenge seems more polarized than ever. It has taken on the ugliest of overtones, in which substantive differences between individuals have led to bitter interpersonal relations marked by acute verbal recriminations and even, in some instances, attempts at character assassination.

Despite the often regrettable personalization of this debate, there have been revealed two basic schools of thought whose representatives are to be found in the body politic, among the political elite, and within the highest circles of the present administration in Washington.¹ The main differences between these two schools are summarized in table 1.

Table 1

Different Conceptions of the Soviet Threat

Category	School 1	School 2
Thrust of Soviet foreign policy	Aggressive	Defensive
Dominant Soviet preoccupation	Expansion	Consolidation
Soviet strategy	Grand design	Opportunistic
Assessment of military balances	Emphasizes Soviet strengths, American weaknesses	Emphasizes American strengths, Soviet weaknesses
Role of arms control	Limited or nonexistent	Considerable
Assessment of Soviet outlook	Optimistic	Pessimistic
Appropriate American response	Promote anti-Soviet united front	Accentuate cooperative aspects of mixed-motive relationship

School 1

Those in School 1 see a Soviet Union whose foreign policy is fundamentally in conflict with the interests of the capitalist states. The dominant preoccupation of the Soviet leadership, according to this view, is to expand Soviet influence throughout the world, encourage the proliferation of Communist governments supportive of Soviet policies, and move irrevocably toward the goal of the demise of the capitalist system.

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To achieve this goal the Soviets have always adhered to a grand strategy which, in turn, has evolved through three phases during the post-World War II period. The first phase concentrated on expansion of Soviet influence in Europe, capitalizing on the position of Soviet military forces at the end of World War II and on the effectiveness of pro-Communist groups within individual European states. Eventually thwarted in Europe through the establishment of the Atlantic Alliance and the economic recovery of the West European nations, the Soviets shifted their attention in the 1960's to wars of national liberation in Third World areas, particularly in Southeast Asia. Now, having achieved victory in this region, the Soviets have turned to the Persian Gulf. Having witnessed the demonstrated vulnerability of the West to the oil pricing and supply policies of the Organization of Petroleum Exporting Nations (OPEC), the Soviet Union now seeks to create an "arc of instability" from Afghanistan in the east to South Yemen and Ethiopia in the west. The ultimate purpose is to gain control over the flow of oil which is the lifeblood of the democratic industrialized world.

At the same time the Soviets have invested enormously to surpass the United States as the world's foremost military power. The Soviet Union has now achieved superiority in most of the static indicators of the strategic nuclear forces, most significantly in the countermilitary potential of its weapons. Soviet superiority over NATO in the European theater continues to grow, particularly with the introduction of the mobile SS-20 intermediate range ballistic missile and the *Backfire* bomber. The Soviets now boast a global naval force, with growing capability to project military and political power at great distances from Soviet borders. The increasing vulnerability to attack of the US land-based missile force, the weaknesses within NATO, the decline in production of US capital ships, and the token nature of the Japanese military commitment present golden opportunities for Soviet adventurism.

At a minimum, if present trends continue, the Soviets will take advantage of their military position to coerce the West for political and economic gain. In a future Cuban missile crisis it will be the Soviets who will prevail. And, it is possible that the Soviet leadership is or will soon be contemplating either the seizure of Western Europe, banking on Soviet nuclear forces to deter the use of American nuclear forces, or a nuclear attack on

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US strategic forces, relying on the threat of a Soviet nuclear third strike on US cities to deter a US second strike on Soviet cities. In this political-military context, arms control with the Soviets is of limited or no value. Arms control agreements would either accentuate Soviet advantages or would inhibit the United States from taking the unilateral actions that are necessary to restore strategic stability.

The outlook of the Soviet leadership is, consequently, highly optimistic. There is strong belief in the historic inevitability of Soviet victory over the West. The most appropriate American response to this state of affairs is to redress the unfavorable military situation and to move toward the establishment of a united front against the Soviet Union, joining the members of NATO, Japan, and China. The purpose of this front would be to complicate Soviet defense planning and, over time, to dissuade the Soviet leadership from the expectation that victory over the West is feasible.

School 2

Members of School 2 see a very different Soviet threat. They see a Soviet foreign policy dominated by extreme caution and by defensive concerns. The maintenance of the Soviet Communist regime and of friendly states contiguous to the Soviet Union remains the highest priority of the ruling elite, with the goal of "victory over capitalism" mere rhetoric that lost its operational significance long ago. This elite continues to be most influenced by the horrors of World War II, and its dominant concern is to consolidate the gains made since 1945 to ensure that the Soviet homeland is never again ravaged by war.

These achievements alone will be difficult to sustain. Friction between the Soviet nationalities and the Russians continues to grow. Economic problems—marginal agricultural productivity, skilled labor shortages, declines in the growth of industrial output—are being seen as chronic and insoluble, without either major economic transfusions from the West (now unlikely) or a significant reorganization of the entire economic system (politically highly dangerous). Geopolitically, there are major trouble spots, as a consideration of the Soviet borderlands reveals.

Eleven states share a border with the Soviet Union: Finland, Poland, Czechoslovakia, Hungary, Romania, Turkey, Iran, Afghanistan, China, Mongolia, and North Korea. Difficulties for the Soviet Union, real or potential, exist with virtually all these states.

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Finland, while neutral and neutralized, shows no signs of acquiescing to Soviet overtures for combined military exercises. Poland, beset by a troubled economy, deeply indebted to the West, now has a Polish Pope to look toward as a powerful religious symbol. His presence and outspokenness are likely to exacerbate considerably church-state relations within Poland and, in turn, Polish-Soviet relations. Czechoslovakia and Hungary have adapted, each in its own way, to Soviet occupation and control, but the complete absence of Soviet institution building makes replays of the events of 1956 and 1968 still possible. Romania maintains ties with China, Israel, and the United States, and, as demonstrated most recently by President Ceausescu, is unwilling to follow automatically Soviet guidance on Warsaw Pact military expenditures. Romanian policies pose the latest serious problem in Eastern Europe for Soviet decisionmakers. Elsewhere in Europe, a post-Tito Yugoslavia presents risks of Soviet-American confrontation as well as prospects for the growth of Soviet influence, and East and West Germany continue to represent a burden and a threat respectively.

In the south, gains in Afghanistan are not likely to be duplicated in Iran under a post-Shah regime dominated either by the military or the Moslem clergy. And in Asia, the completion of the Sino-Japanese Treaty of Peace and Friendship, the normalization of Sino-American relations, and the firm commitment of the Chinese leadership to modernize economically and militarily, and to pursue an activist foreign policy, must be seen in Moscow as posing the gravest of threats. Even North Korea refuses to take sides in the Sino-Soviet dispute and most recently has apparently rejected Soviet advice transmitted to President Kim Il-sung by East German head of state Honecker that North Korea abandon its hopes to unify Korea. The completion of the Soviet-Vietnamese Friendship Treaty has been the only offsetting Soviet gain in Asia.

As seen by members of School 2, the Soviet Union, beset by these difficulties, pursues an opportunistic foreign policy divorced from any grand strategy, highly pragmatic and cautious, and producing very mixed results. For every victory in Angola, Ethiopia, or Mozambique, there is defeat in Egypt, Ghana, or Indonesia.

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While the Soviets clearly have made gains in the growth of their military power, the Soviet leadership remains deterred from initiating acts which could trigger a Soviet-American conflict. The explanation for the Soviet military buildup is to be found more in Russian paranoia and bureaucratic inertia than in aggressive intent. Moreover, too many American analysts are unduly pessimistic about American military strength vis-a-vis Soviet forces. According to members of School 2, the most effective public relations efforts in support of Soviet military capability and its political utility are those mounted not by the Soviets but by members of School 1. In fact, the Soviets can gain little or no political advantage from their military forces unless the United States permits them to do so, and the Soviets know full well that a Warsaw Pact attack on NATO forces could, and any Soviet nuclear attack on the United States would, lead to a devastating nuclear response against the Soviet homeland. No rational Soviet leader would judge either of these situations preferable to the present one. Negotiated arms control agreements therefore hold out the prospect of stabilizing the Soviet-American military balance, a highly desirable alternative to stabilization through arms competition.

Faced by a highly dynamic Western capitalist system which possesses an enormous technological advantage over the Soviet Union, Soviet leaders are fundamentally pessimistic about the long-term abilities of the Communist system to compete effectively in economic or political terms. The next generation of Soviet leaders, better educated and more well traveled in the West than their predecessors, must become convinced that the mixed-motive Soviet-American relationship holds the promise for enhanced cooperation and reduced confrontation. Accordingly, adherents of School 2 feel the United States should adopt policies to bolster this judgment and should avoid relationships, with China in particular, that are seen as fostering anti-Soviet political alignments.

Theory versus Reality

While some of the arguments presented above are no doubt oversimplified, they represent an attempt to summarize objectively the two contending American interpretations of Soviet behavior, and the appropriate lines of policy that the United States should adopt as a consequence. Many observers might find

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themselves in partial agreement both with School 1 and with School 2, but unable to accept the full line of argument of either school. This suggests that the interpretations of the two schools are not necessarily mutually exclusive and that in many instances the differences may be more a matter of degree than of kind. Some composite of the two sets of arguments is perhaps closest to the reality of Soviet decisionmaking.

Whichever school is closer to the mark, a determination that will probably never be able to be made with certainty, it is the growth of Soviet military strength that fuels American concerns. This growth in military strength is simply not likely to stop. For whether the Soviet leadership has truly aggressive designs on the West or is fearful of the West or just listens to the song "Doin' What Comes Naturally," continued investment in military forces will be seen as being in the Soviet national interest. Indeed, enhancing military strength satisfies all three explanations: it provides the leadership with political and military options, it pacifies Soviet concerns about a hostile world, and it is one activity in which Soviet industry performs well. Barring a major internal upheaval, it is becoming difficult to conceive of conditions under which the Soviets would cease their military buildup.

Reducing the Likelihood of Soviet-American Confrontation

Assuming the growth of Soviet military programs continues across the board, the United States and its allies have no choice but to keep pace with substantial force modernization programs of their own, while maintaining the expectation that arms control could play a moderating role in at least a limited fashion. Failure to keep pace would risk providing opportunities for the Soviets to gain political or military advantages truly inimical to Western interests. Indeed, since capabilities and intentions are highly interrelated, even should School 2 be at present the more correct interpretation of Soviet behavior, sizable disparities between Soviet and American military strength would in time lead Soviet leaders to adopt policies more consistent with the interpretations of School 1.

For purposes of stimulating discussion, some of the more probable areas of Soviet-American confrontation are cited below together with suggested means of reducing their likelihood.

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Strategic Nuclear Forces

At the strategic nuclear level it is important that the vulnerability of the US land-based missile force and its command, control, and communication systems be alleviated. This is true for several reasons. First, it does not make good military sense to permit a major element of the US nuclear forces to remain vulnerable to a Soviet first strike. No military commander would choose to leave a large portion of his forces susceptible to attack if he could alter the situation, even if many of his forces were highly invulnerable. And, given the uncertainties surrounding the future effectiveness of the other legs of the triad, it is prudent to make force posture adjustments in this case as well, irrespective of the doctrinal assumptions of assured destruction. The penetrability of long-range bombers, whether armed with gravity bombs, short-range attack missiles, or air-launched cruise missiles (ALCM's), will become more questionable with the development of Soviet look-down, shoot-down air defenses in the 1980's. Decisions on the procurement of a new standoff bomber armed with ALCM's and the number of ALCM's that would be deployed have yet to be made and will be influenced by the outcome of SALT II. Problems persist in communicating with the fleet of ballistic-missile submarines; some of the submarines may be vulnerable to barrage attacks; and the proverbial "breakthrough" in antisubmarine warfare, utilizing perhaps satellite-based, high-energy weapons, cannot be dismissed as sheer fantasy. There is no particular advantage for the United States in permitting the Soviets to solve with finality the targeting of one leg of the triad, leaving them free to pursue solutions to the other two parts of the problem.

The operational question is: What is the appropriate means of alleviating the vulnerability problem? The number of options are many, some feasible in the short term, some in the longer term, and some probably not at all.² Unfortunately, none of these alternatives is particularly attractive, but the least worst (which-ever that is) is preferable to the current state of affairs. Because in addition to military concerns, there are political and psychological costs to the stand-pat option. The ICBM vulnerability problem is now the centerpiece of the US strategic debate. The inability to resolve the problem continues to undermine the SALT process and permits those most concerned about the growing military dangers of the situation to make the case, oftentimes

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persuasive, that Soviet-American "rough strategic parity" has already degenerated to a condition of American strategic inferiority. This case strikes at the core of the political sensitivities within the Atlantic Alliance, at the psychological forces underpinning a credible deterrence policy, and at those intangibles which influence crisis behavior. With the resolution of the issue will come stronger European confidence in US security guarantees, greater American confidence in its own ability to protect its interests in the event of a crisis, and reduced Soviet confidence that their nuclear forces are useful for military or political gains.

The SALT negotiations will lead shortly to the completion of a treaty or the entire process may very well break down. The merits of the prospective treaty will not be discussed here.³ Yet should it enter into force, the SALT III negotiations might best proceed other than in a search for a formula that would lead to deep quantitative reductions in, and qualitative constraints on, the central strategic systems (that is, ICBM's, SLBM's, and heavy bombers). Instead, attention should be turned to those developments related to the nuclear balance which each side finds particularly threatening. For the United States such a list would include antisatellite weapons, civil defense, "Euro-strategic" weapons, and military doctrine. The banning of antisatellite weapons tests, the curtailment of the Soviet civil defense program, reductions in the deployment of SS-20's and *Backfire* bombers designated for the European theater or the deployment of American-controlled ground-launched cruise missiles and extended-range Pershing missiles in West Germany, and a Soviet-American joint endorsement of a set of definitions of deterrence and strategic stability would provide tangible and intangible evidence that a stable nuclear competition was being and could be maintained.

Regional Confrontations

There are several regions of the world where the United States and the Soviet Union could confront each other in ways that could lead to war. A brief presentation of assertions, some controversial and others less so, should serve to stimulate discussion.

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Central Europe. Redressing the conventional military balance in Central Europe will strengthen stability in the region. Increased emphasis on rapid deployment of reserves from the United States to West Germany, enhanced interoperability of NATO forces, introduction of large numbers of antitank guided munitions and surface-to-air missile systems, and the successful resolution of the Eurostrategic weapon imbalance (cited in the previous section) will keep the prospect of war in Central Europe extremely remote. At the same time the credibility of the US security guarantee to the defense of Western Europe must be buttressed by the retention of large contingents of US combat troops at the frontier between the Federal Republic of Germany and the German Democratic Republic. Still the maintenance of an overall condition of strategic nuclear parity must be the dominant perception in Bonn, Washington, and Moscow.

If these conditions are met, the gravest threat to the security of the West European states would come from within: from sluggish economic performance, maldistribution of income, and the maintenance of rigid class lines that would lead to social unrest and the renewed strength of the Eurocommunist parties.

The European Flanks. Two particular problems persist in the flanks: the northern Norway grab and the post-Tito Yugoslav crisis. Despite overwhelming local Soviet superiority in the region of the Kola Peninsula, the likelihood of hostilities in northern Norway should be no better or worse than those for any European state in NATO, so long as the conditions for enhanced stability in Central Europe are met. The risks for the Soviet leadership in grabbing the three northern provinces of Norway are simply too great, and the potential benefits too small, for the Soviets to take such action unless they have made the decision at the highest political levels to engage in total war with the United States.

Yugoslavia, however, presents a very different problem. The appeal of a post-Tito Yugoslavia rejoining the Soviet orbit must be powerful in Moscow on both ideological and geopolitical grounds: Yugoslavia's decentralized brand of communism, its leadership in the nonaligned movement, and its potential as a future base of Chinese or American influence would disappear. Yugoslavia's naval bases, its contiguity to Italy and Greece, and its utility in the event of future hostilities in the Middle East would be at the service of Soviet interests. The challenge to

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Soviet policy is to achieve these objectives without provoking a Soviet-American confrontation or appearing to be engaged in an act of imperialism. This could best be achieved by supplying arms to pro-Soviet Yugoslav factions without introducing Soviet troops into the country. A new kind of "proxy war" could develop between American- and Soviet-backed Yugoslav forces. It is doubtful, though, that the United States would risk introducing its own combatants into the country unless it had strong evidence that the Soviet Union was unprepared to follow suit. The introduction of Soviet troops into the region could lead to a major superpower crisis, but not likely to war. Instead, the United States would most probably respond with economic and political sanctions against the Soviet Union and with increased commitments to the defense of NATO's southern flank. Diffusion of tensions in the region would best be served by agreed upon limitations on Soviet troop deployments in Bulgaria and Hungary, but there is no prospect that these would materialize.

Persian Gulf and Middle East. The crisis that materialized in Iran in the fall of 1978 illustrates the extreme caution which both the Soviet Union and the United States exercise in times of international crisis and that, at least at this writing, they have had limited success in influencing the outcome of the political revolt against Mohammed Riza Shah Pahlavi.

While scores of American officials counseled the Shah on his best courses of action as the crisis proceeded, and some leftist protesters have no doubt been backed by Soviet financial support, these efforts pale in comparison to the major confrontations between the army and the clergy, between modernization and religious tradition, between political development and economic growth, and between authoritarianism and democracy—confrontations which are at the heart of the Iranian struggle. Even in the face of warnings by President Brezhnev that the United States not intervene, and threats by the United States to send a carrier task force into the Persian Gulf to symbolize American resistance to Soviet intervention, neither power appears to have had much success in controlling events. Despite the crucial importance of Iran to both superpowers and to the industrialized West that is dependent on Iranian oil, this crisis appears to be one which is likely to be decided irrespective of the array of military forces in the region and, perhaps, even independent of the balance of military might within the country itself.

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What is of continuing concern, of course, is how the Iranian crisis will affect the other Persian Gulf states, particularly Saudi Arabia, whether the shift in Iranian domestic politics will impact directly on the Arab-Israeli conflict (aside from the likely cutoff of Iranian oil supplies to Israel), and how the vast arsenal acquired by the Shah will be used by his successors. In terms of superpower interests, the crisis accentuates the importance of naval power and of airlift and sealift capabilities as political and military instruments—to intervene, to threaten to intervene, to deter the opponent from intervening, to show support for a particular contending party, to evacuate citizens or deposed leaders. In general terms, therefore, it is the power with the most effective naval/airlift/sealift forces that is likely to prevail in a crisis in this region.

China and East Asia. It may well be that the prospects of superpower confrontation over the next 20 years were most profoundly affected by the signing of the Sino-Japanese Treaty of Peace and Friendship in August 1978, and the normalization of Sino-American relations which took effect 1 January 1979. In the most dramatic terms, post-Mao China has chosen Western assistance over self-reliance, economic growth over ideological purity, and the West generally—and the United States in particular—over the Soviet Union. No one can state with confidence whether this Chinese policy will be sustained or, if sustained, whether the Chinese political system will undergo a significant transformation toward far greater pluralism. But it is not a wild exaggeration to assert that this shift in Sino-Japanese and Sino-American relations could be the single most significant development in world politics since the original lines of confrontation were drawn between the United States and the Soviet Union at the close of World War II. The effects could be profound: the formation of an incipient Chinese-Japanese-European-American alliance against the Soviet Union; the end of the period of reduced tensions in Soviet-American relations and the collapse of SALT; the stimulus of a still greater Soviet military buildup leading to a Sino-Soviet conflict, perhaps triggered by the hostilities between Vietnam and Cambodia. It may require the most extreme prudence on the part of the leaders of the United States, China, and the Soviet Union, as well as the greatest care in clarifying nonhostile intentions in order to avoid war.⁴

Global and Regional Problems

Beyond those areas dominated by the Soviet-American rivalry are a different set of global and regional problems related to international conflict. Two will be addressed here: the proliferation of nuclear weapons, and the spread of conventional arms.

Nuclear Proliferation

The problem of nuclear weapons proliferation is now a fundamental concern of a large number of national governments and is a matter intimately related to the basic energy needs of both the developed and developing nations. It has fast become an issue of high politics on a global scale.

This is a new development. While fear of the spread of nuclear weapons has been evident since the United States first developed these instruments of mass destruction more than three decades ago, it is only the events of the last 5 years that have produced this sense of urgency. The 1973 oil embargo by the Organization of Petroleum Exporting Countries clarified as never before the significance of being dependent on external sources for energy supplies and stimulated an enormous quest for energy independence by nations throughout the world. Because of the widespread belief that nuclear energy is the only technologically feasible alternative to fossil fuels for the balance of this century, the demand for nationally owned facilities capable of using nuclear energy for electric power generation has markedly increased. The furor resulting from the 1975 agreement of cooperation between the Federal Republic of Germany and Brazil—the so-called German-Brazilian nuclear deal—underscored, however, the strong linkage present between nuclear energy and nuclear weapons. Sensitive nuclear facilities, particularly those used for uranium enrichment and for reprocessing of spent fuel, can provide a nation with sufficient amounts of weapons-grade material to produce a credible nuclear weapons option as a byproduct of a domestic nuclear energy program. The prospect of 30 or 40 nations obtaining this option by the year 2000 is viewed by many as a fundamental challenge to world order.⁵

The Indian peaceful nuclear explosion of May 1974 illustrated two further points: that sufficient weapons-grade material could be obtained to fabricate a nuclear weapon even from a

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research reactor, and that the concept of a "peaceful" nuclear explosion could be used by nations as a rationale for developing devices which are indistinguishable in their effects from nuclear weapons.

As a consequence of these developments a vigorous debate arose, first in the United States and then in a number of the advanced industrial societies, concerning the most efficacious means of coping with the spread of nuclear weapons. Out of this debate a consensus developed in American governmental and academic circles that a combination of security-related and energy-related strategies needed to be implemented by the United States and other developed nations in order to combat nuclear proliferation. While many of these strategies have been adopted by the Carter administration, they have met considerable resistance.⁶ Individuals and groups associated with the US nuclear industry have opposed those strategies that threatened, or were perceived to threaten, the growth and profitability of the industry. A number of the developed nations, particularly France, the Federal Republic of Germany, and Japan, have been suspicious that American energy-related strategies are motivated not by a concern over the spread of nuclear weapons, but by a desire to perpetuate American dominance of the nuclear export market; consequently, they have been reluctant to accept the American position.

Further, many nations in the developing world have argued that the United States, in the name of nuclear nonproliferation, seeks to implement policies that are highly discriminatory vis-a-vis nonnuclear states and that are designed to maintain American political, military, and economic power at the expense of the poorer nations.

Therefore, few students of the nuclear proliferation problem expect it to be solved. Rather, attention has shifted from efforts aimed at stopping the spread to efforts aimed at discouraging it and learning to live with it. Indeed, the view that nuclear proliferation would be a stabilizing force in world politics, while widely rejected in the United States, commands many adherents, especially among individuals whose nations are caught in the grip of intense regional conflict situations. The argument is made that the system of mutual deterrence that nuclear weapons have brought to the Soviet-American relationship is not peculiar to this relationship and can in fact be replicated in the Middle East, South Asia, and elsewhere.

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Hence, there is by no means a global consensus on either the threat posed by nuclear proliferation or the steps that should be taken to deal with it. Instead the issue has inflamed domestic debate in many nations, has strained alliance relationships, has sharpened the confrontation between the North and the South, and has served to complicate concepts of national and international security.

Four characteristics of the nuclear proliferation problem need to be well appreciated. First, the barriers to proliferation continue to lower over time: security guarantees that constrained some states and reassured others are less credible today than 15 years ago, particularly those involving the United States; the domestic opposition to nuclear weapons programs in many of the developing countries is shrinking; the economic and technological resources needed to acquire nuclear weapons are no longer prohibitive, especially for the OPEC nations; and weapons-grade material will be more plentiful as chemical reprocessing and uranium enrichment technology becomes widespread and when the fast-breeder reactor becomes commercially available.⁷ Second, the incentives to acquire nuclear weapons are not uniform. Some states—perhaps Israel and South Africa—see nuclear weapons acquisition as protecting them from external threats and guaranteeing their national sovereignty. Other states—such as Brazil and, until recently, Iran—appear to seek regional or global preeminence and are attracted to nuclear weapons acquisition for status and prestige and reasons of political influence. Therefore, a wide variety of disincentives would need to be applied to control the spread of nuclear weaponry. Third, the actual military capabilities of nuclear weapons powers can and will vary drastically, from a “bomb in the basement,” to the ability to detonate controlled nuclear devices, to the possession of a sophisticated force of invulnerable nuclear delivery vehicles. And fourth, incremental costs of a bomb program are insignificant for a nation that has the will and capability to acquire nuclear weapons.

Table 2 summarizes those states often considered to be in the nuclear threshold category. As this table suggests, pressures to acquire nuclear weapons are mounting in various parts of the world and are probably beyond the ability of any nation, or group of nations, to control. The Carter initiatives, which

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represent the most vigorous effort by any government to control the spread of nuclear weapons, are already meeting substantial resistance and are not likely to be fully successful.

Moreover, laser enrichment of uranium and the use of nuclear weapons by terrorist groups are real prospects that would greatly exacerbate the nuclear proliferation problem. The inability of the United States and the Soviet Union to curb their nuclear weapons appetites, as demonstrated in the long-delayed SALT II agreement, sets a poor example for nonnuclear states and provides a rationale for those nations that seek an independent nuclear weapons capability. Indeed, it is fast becoming possible for nonnuclear states to cooperate solely with each other in order to acquire nuclear weapons, bypassing the supplier states altogether. In sum, it is difficult to be optimistic that the spread of nuclear weapons can be controlled.

It is not at all clear what the political, economic, and military implications of widespread nuclear proliferation will be. What can be stated with confidence, however, is that many of the developing nations consider nuclear energy programs to be an integral part of their economic future. The prevalent philosophy seems to be: "we missed the industrial revolution; we will not miss the nuclear revolution." Short of very close cooperation among the nuclear supplier states, a harmonious and productive dialogue between suppliers and recipients, and the imposition of severe sanctions on any state that explodes a nuclear device for peaceful purposes or in anger—none of these developments can be classified as high-probability events—future economic and military planning will have to take into account as best it can the global spread of both nuclear energy and nuclear weapons.

Arms Transfers and Economic Development

As the Carter administration assumed power in 1977, the maze of statistical evidence associated with conventional arms transfers revealed the following central points:

- **For the decade from 1965 through 1974, the United States accounted for roughly half the dollar volume of conventional arms transferred throughout the world.** The United States and the Soviet Union together accounted for almost 80 percent of the arms transferred, and only seven other nations were meaningful contributors to the

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Table 2

Nuclear Threshold States

Region	State	Capability	Will
Western Europe	Federal Republic of Germany	Plentiful; possesses necessary technology and material	Dependent on loss of NATO credibility
Eastern Europe	Yugoslavia	Marginal; possesses research reactor	Dependent on threats to national sovereignty after Tito
Middle East	Israel	Plentiful; possesses necessary technology and material	Widely assumed to possess nuclear weapons
	Libya	Nil	Thwarted in attempts to purchase nuclear weapons
	Syria	Nil	Seeks nuclear weapons to counter Israeli capability
	Iraq	Nil; seeks reprocessing plant	Seeks nuclear weapons to counter Israeli capability and prospective Iranian capability
Persian Gulf	Iran	Power reactors on order have dropped from 23 to 2 since crisis	Thought to be seeking regional hegemony until recent crisis
Sub-Saharan Africa	South Africa	Substantial; has enrichment facility named "Valindaba" (Zulu for "the talking is over"). Second largest source of natural uranium in the world	Seeks to acquire nuclear weapons to preserve national sovereignty
South Asia	Pakistan	Nil; seeks to purchase reprocessing plant	Seeks nuclear weapons to counter Indian capability and for national prestige
East Asia	South Korea	Nil; failed in efforts to purchase reprocessing plant	Seeks nuclear weapons to preserve national sovereignty
	Taiwan	Marginal; possesses research reactor	Seeks nuclear weapons to preserve national sovereignty
	Japan	Plentiful; possesses necessary technology and material	Dependent on nuclear weapon capabilities of South Korea and Taiwan and on perceived threat from Soviet Union
Latin America	Brazil	Marginal; likely to acquire full fuel cycle from West Germany	Thought to be seeking regional hegemony
	Argentina	Marginal; possesses research reactors	May seek nuclear weapons to counter Brazilian capability

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balance. Among Third World nations, it is clear that the Middle Eastern and Persian Gulf states are the principal recipients of arms transfers. In 1975 eight of the eleven nations in the Third World receiving the greatest dollar volume in conventional weapons were located in these regions.

- **The volume of arms transferred in the world in 1974 (\$8.365 billion) was not appreciably greater than the volume in 1965 (\$5.315 billion), if the increase in military sales to the Middle East and Persian Gulf states during this period (\$2.315 billion) were excluded.** The principal American clients had become Iran, Saudi Arabia, and Israel. The principal Soviet clients were Syria, Iraq, and Libya.
- **In the previous 10 years the terms of transfer had changed from "aid" (grants, excess stocks and service-funded equipment) to "trade" (mostly government-to-government foreign military sales for cash or credit, with some commercial sales).**
- **The quality of the arms being transferred had improved markedly.** In the days of "aid," the arms transferred were aged and obsolescent. In recent years the most sophisticated weapon systems—tactical aircraft, surface-to-air missiles, and antitank missiles, for example—were being transferred to Third World states.
- **Dependence on arms sales by the supplier nations, while difficult to assess, was clearly nontrivial.** In the United States, for example, arms exports were expected to reach about \$10 billion in 1977, approximately 8 percent of total US exports and accounting for about 400,000 jobs.
- **Dependence on the supplier nations by the recipient nations was growing rapidly.** Some analysts argued, for instance, that the weaponry supplied by the United States to Iran was sufficiently complex that American technical advisors in large numbers needed to be stationed in Iran permanently in order to ensure that the weapon systems functioned as designed.
- **A fundamental shift taking place as a result of the arms trade was the development of greatly increased capacities for indigenous weapon system production in a number of**

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developing nations. This trend was expected to continue in the 1980's. Many developing nations were striving for arms independence and viewed indigenous production as offering a number of advantages: removal of a condition of dependency for spare parts and replacements; support of local industry; and potential sources of revenue should the developing nation itself become an arms exporter. Evidence of movement toward indigenous production capabilities was noticeable in India, Israel, South Africa, South Korea, and Taiwan. In 1975 Egypt, Saudi Arabia, Qatar, and the United Arab Emirates announced the formation of the Arab Military Industrialization Organization. In 1976 Israel produced an improved version of the supersonic Kfir fighter aircraft for its own use and export, and signed military coproduction agreements with the United States. A new class of "secondary" arms suppliers was expected to develop in the 1980's, perhaps led by China, India, and Israel.

- **Dependency arrangements associated with arms transfers were not expected to disappear even with the establishment of domestic defense industries.** The developing nations would still require external assistance for electronic components, special alloys, and the research and development efforts required to maintain a sophisticated weapons program. Moreover, some states would probably be interested in developing indigenous production capabilities primarily as sources of revenue to purchase additional sophisticated weaponry from the principal arms suppliers.

As in the case of nuclear proliferation, the incentives for acquisition of conventional arms appeared to be principally two-fold: as a perceived means of enhancing national security and as a reflection of desires by recipient nations to increase their political influence.

In late May 1977, in an effort to reverse the increasing transfers of conventional arms, President Carter announced:

The United States will henceforth view arms transfers as an exceptional foreign policy implement, to be used only in instances where it can be clearly demonstrated that the transfer contributes to our national security interests. . . . We will continue to utilize

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arms transfers to promote our security and the security of our close friends. But, in the future, the burden of persuasion will be on those who favor a particular arms sale, rather than those who oppose it.

Mr. Carter made it clear that the NATO countries, Japan, Australia, New Zealand, and Israel were to be exempt from these restrictions. But it was the basic aim of the policy to reduce the sales volume of conventional arms, to prohibit the development of advanced weapon systems in the United States that were specifically designed for export, to eliminate the American role as the "first supplier" of advanced weapons to countries seeking "new or significantly higher combat capability," and to cease production agreements with other countries for "significant weapons."

The American policy was predicated on the assumption that, by taking the initiative, the United States would set the proper example for all principal weapon suppliers; and that the ultimate effect of the policy would be to reverse the trend in both the quantity and quality of weaponry transferred to the developing world.

The last 18 months have demonstrated that the policy was mildly successful in terms of meeting certain percentage reductions in the total dollar volume of US arms sold to non-exempt nations within a given fiscal year. Moreover, the United States was able to enlist Soviet participation in bilateral conventional arms transfer talks, which held some promise until a feud within the Carter administration disrupted the last round of negotiations in Mexico City in December 1978.

The Carter policy has in fact failed to win support from any of the major suppliers. France and Britain had no incentive to go along, for economic reasons. The Soviet Union, despite participating in discussions of conventional arms control, derives its political influence abroad almost solely through arms sales, and therefore has no reason to cooperate with the Carter policy. The general policy guidelines were overruled by higher order concerns in the "great plane deal" to Egypt, Israel, and Saudi Arabia. And it became clear that a tradeoff existed between conventional arms control and nuclear nonproliferation. Denying Pakistan high-performance A-7 aircraft, for example, increased

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rather than decreased the felt need by Pakistani officials for nuclear weapons as a means of guaranteeing Pakistan's national security. Hence, the Carter administration's ability to retain both its vigorous resistance to nuclear proliferation and its tough stand on conventional arms transfers is highly dubious.

Most importantly, however, arms transfers *per se* are not the significant issue. From the perspective of developing nations, the right question to ask is: What are the effects of military expenditures, and the organizations that develop in their wake, on economic development? Do these expenditures stimulate development, as some contend, by introducing high technology goods and associated personnel into the economic mainstream of the society? Or, are these expenditures fundamentally a budgetary drain which robs the development process of needed financial support? From the perspective of US foreign policy we need to ask: Under what conditions have arms transfers brought stability to a region, and when have they induced conflict? When have they made no difference at all? Under what circumstances have arms transfers brought political influence? It is in the American interest to learn the answers to these questions—for the growth of economic development should promote political stability, which in turn would support the goals of US foreign policy.

A Final Troubling Thought

As every school child learns, one of the great blessings of the United States has been its geographical position. Bordered by two oceans and two relatively weak and friendly neighbors, the United States was permitted the luxury of economic development free from foreign interference. In two world wars in which its troops played a decisive role, its homeland was unscathed. The development of Soviet ICBM's made the United States truly vulnerable to attack for the first time in American history.

Now, it is at least conceivable that in the decades ahead the United States will be faced by two hostile neighbors on its borders. Mexico, with strong antipathy toward the United States dating from the Mexican War of the 1840's, could be transformed into a major political and perhaps even military power as a consequence of the revenues it will earn from its newly

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discovered oil reserves. With proven reserves of 40 billion barrels and estimates running as high as 300 billion barrels of crude oil, Mexico could become rich and powerful overnight, with dangerous consequences for the United States. To the north, the move toward a separatist Quebec continues. The French-speaking population, with ill feelings toward both English-speaking Canadians and Americans, remains relatively poor. Quebec could become a hotbed of anti-American sentiment. It may be that in 20 years, America's borderlands will pose a nontrivial threat to US security interests.

Discussion On Arms, Arms Control, and Conflict

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Afforded the opportunity to open the discussion, Dr. Nacht, as the author of the framework paper, exercised this traditional role in a somewhat nontraditional way, noting that his approach to the subject had been designed to provoke with assertions, rather than analysis, and to divide the subject into areas dominated by the US-Soviet relationship and areas not so dominated. One such assertion summarized his view of the importance of the issues under discussion:

This administration, and we as a nation, are preparing to undergo the most significant debate on national security since Sputnik, and possibly the most important debate in this century.

In casting the arms control issue in such terms, the evening's discussion began with virtually total agreement from the assembled group. However, an event which had occurred a few days prior to the meeting—the recognition of the People's Republic of China by the United States—was uppermost in the mind of the first guest to comment on the paper:

The normalization of US-PRC relations has signalled a fundamental shift in world politics which is bound to essentially change our future relations with the Soviet Union. It does not augur well.

The observations, reservations, questions, and assertions of the guests which they appended to their fundamental agreement with this proposition dominated the discussion of the complex relationship among arms, arms control, and

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the prospects for conflict which followed. Here are some of these views.

Soviet Perception of Containment

The Soviet reaction to a perceived "new form of containment" is an essential determinant of our "mutually entwined futures." The Soviet Union now views itself confronted with a sophisticated form of containing arrangement by Japan, China, Western Europe, and the United States. To what degree this perception will prompt the Soviet Union to participate in the spirit of arms control is an argument which can go either way—the argument dependent on the vigor of viewpoint of the membership of the two schools of thought described in the paper. But the argument is immaterial, regardless of the theoretical winners' and losers' viewpoints; the argument is about a future in which only the real events, the perceptions and behavior of the superpowers, over time, have real significance.

This discussion, then, began with the issue of normalization and its impact on the triangular relationship of the great powers, with particular focus on arms control. What aspect, for example, of the decision to "normalize" US-Chinese relations is so antagonistic, or viewed as so antagonistic by the Soviets, to cause a major disruption in the arms control negotiation process? The Soviets anticipated recognition of China by the Carter administration and, therefore, it should have come as no surprise. But they failed, perhaps, to anticipate either an arms transfer element or an economic package in the process; the real problem now becomes one of determining the future focus of the Sino-Soviet conflict with an essentially new element added. Is there any possibility, even slight, of there eventually arising an internal Soviet reaction against linking the arms control initiatives of the West with the recognition of China?

The Future of the Superpower Relationship

Comments soon established the basic consensus that the real issue at the heart of the arms control dilemma—its immediate and central relation to the future of conflict—is the future of the superpower relationship. Arms control can be termed a factor in the survival of the world, as we know it, but it is not the controlling factor in our efforts to survive. Other factors should more properly be considered the “walls within which the relationship with the Soviets perdures”; but arms control must be considered an ingredient providing strength to all the walls collectively, the continuing, binding mortar.

The professional arms controller, however, must come to grips with a terrible urgency which drives him and his counterparts to find immediate answers. At the same time, another factor—enormously complicating his task—comes into play: he must cultivate a pragmatism with which he must carefully assess what real world politics—on *both* sides—will consider or permit, and he must deal with the dynamics of the terribly complex multilateral aspects of the central problem itself. The individuals closest to the process maintain that we cannot place ourselves in a position of trading short-term political gains for long-term prospects of stability, all the while acknowledging that “this is not a terribly optimistic period for human life.” We are, in many ways, regrettably “talking beyond each other” on several different levels. To add to, or possibly at the root of, the problem, the Soviet Union fears US industrial and technological competence and these fears tend to make the Soviet Union more defensive at precisely the very moment when the United States itself realizes the need not to “negotiate under fear.” Confident that the Soviets have not yet reached effective superiority, nor have we been shut into a corner, several panelists strongly emphasized the importance of continuing the negotiating process, difficulties notwithstanding.

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Is part of the problem the fact that all do not view the process in these terms? The US Senate, for example, may not be attuned to the broader issues at all. If SALT II is defeated, it is likely that its opponents will have succeeded on the basis of completely extraneous political issues, partly in reactive response to the administration's B-1, Panama, and neutron bomb positions and partly in response to "small details of irrelevance." The broader problem may be twofold—one a matter, not of SALT but of an overall strategic concept into which SALT must fit; the other a matter of intense debate focused completely on the wrong targets. The overriding requirement, then, is to couch the argument in the proper terms, allowing the "ordinary Senator" to see the picture itself, rather than the minutiae of verification.

Is part of the problem the fact that arms control is wedded to "detente," with SALT a centerpiece? Was arms control oversold and discredited?

Is part of the problem the fact that our own unambiguous nuclear and military superiority has sufficiently colored our perceptions to the extent that despite the arms controllers insisting that SALT stand on its own, SALT's "image" has gone the way of detente?

Is part of the problem the fact that we have become so preoccupied with procedural issues—the "obnoxious" way the Soviets have "behaved" in the international arena of late—that we have now a built-in reluctance to look beyond an apparent "lack of housebreaking" to the substantive issues at stake?

Is part of the problem a reluctance to accept the fact that we have no true alternatives to a continuation of the arms control process? We do, after all, understand each other, we and the Soviets, despite the "transient frustrations" of Angola, Chinese normalization, and Afghanistan. Nevertheless, there is an asymmetry in US-USSR relative capabilities to work together in a chaotic

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world—the preponderance of “advantage” being on the US side with its flexibility and capacity to adapt to change. Have we perhaps over-focused on our own ability to accommodate to change and thereby lost sight of the fact that the alternative—the sudden discontinuity of chaos—is essentially an unacceptable future?

Is part of the problem a certain structural schizophrenia, in that we talk of the “great” SALT/arms control issues at the same time that we are fencing an increase in defense spending into the FY 1980 budget?

Is part of the problem a “nouveau riche” attitude on the part of the Soviets, newly come to perceived parity from inferiority as opposed to the “genteel shabbiness” of our own military posture, having come from the other direction to parity from three decades of unquestioned superiority?

Is our analysis of the Soviet outlook attributed to various “schools” in Dr. Nacht’s paper overly optimistic? Suppose that instead of “cautious expansionists” or “defensive opportunists,” we are really dealing with aggressive opportunism or defensiveness *with* a grand design, confident of the inexorable thrust of history—and right! If so, will we always be doomed to “react,” with more SALT, more arms programs, more “initiatives,” which are really thinly disguised attempts to minimize our losses from Soviet actions?

The issue has become impassioned for the United States, however, and promises to become even more so, for reasons that have nothing whatsoever to do with US-Soviet relationships. The US *self*-image in the world seems at stake, with the continuing after-pain of Vietnam and Watergate causing serious concern about whether the United States has the capability to act, or the sense to act sensibly. It is crucially important to any analysis of the problem that this extra dimension—more easily apparent to non-Americans than to ourselves—be understood.

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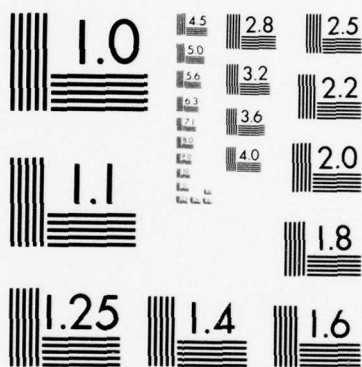
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MICROCOPY RESOLUTION TEST CHART
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They perceive very strong internal political elements in the United States at work in the arms control dialogues, a generational struggle for US leadership, and a potential "way to get back at" the evils and excesses of the military-industrial complex. As a result, in this context, in our failure to grasp this dimension, we may have unwittingly asked too much of arms control, thinking that SALT can do more than it actually is capable of doing. The resultant bad image, of a potentially failing SALT II, impedes what is really needed, a conscious effort by the people who see the process as more valuable than the *product*.

Agreeing that the process has an importance which may well transcend the early products of such a process, other panelists saw the issue quite differently.

Arms control is essentially a political process, but the intentions and expectations of the participants are not immutable and need to be carefully "tracked" as the process unfolds. Given the precarious balance of international power; given the fact that although we still display the trappings of power, the Soviets may really now have the edge; given the "absurdity of our nuclear posture with respect to NATO"; and given the fact that deterrence only "works" if both sides agree to be deterred, the essential questions for the United States to address are: the continued Soviet perceptions of value in maintaining a stable system; the quality of the US response to crossroads in the negotiating process (with "will" or with "power?"); and ask not what the Soviet Union is "up to" as much as having a clear grasp of what we ourselves are "up to."

What if SALT Fails?

Continuing on the theme, but from a programmatic level, another asked how arms control and force deployments can be used together in a constructive way. If SALT fails, the European consequences alone are enormous. How

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then do we proceed with plans for the future of tactical nuclear forces and "gray area" systems, in the light of uncertainty about a SALT III, let alone SALT II? He pointed out the weakness of the SALT II agreement in coming to grips with the European problem and the continued importance of follow-on SALT III talks in this setting.

This thesis was immediately challenged by another panelist who advocated precisely the opposite—that we *not* link SALT II and SALT III; if SALT II fails, there are perfectly reasonable alternatives which are even more suitable to solving the essential problem of stability.

A truly "Presidential" statement of the fundamental aspects of the US-Soviet relationship would be an essential first step. Discounting a failed SALT treaty as simply a discarded mechanism, a new beginning, focused on the viable multinational relationships already existing, could then proceed. He saw no future in continuing to identify a strategic arms agreement as a failure and a setback. He urged instead that both sides then proceed along a depolarizing path which would ultimately force each to line up with the other, in prudence, if not in a formally contained relationship.

But there *has* to be a linkage because there *is* a linkage! Ignoring it cannot remove it! In an impassioned rebuttal, the arms control process was compared to an attempt to view the world through a partially drawn windowshade. If we pull down the shade in 1979, we "cannot expect to run to another window in a few years. This may be the only window in the room, and in any event, we cannot expect to find the same vista 5 years from now."

Conclusion

In a final statement of what appeared to be a reasonable consensus of the group, broadly conceived, it was noted first that without progress in arms control the consequences for both the

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United States and the Soviet Union may be both real and terrifying. To the Soviets, facing an encircling new form of containment, and to the United States, no longer confident of the utility of its power, these consequences can easily affect the safety of every inhabitant of the globe. It is critical, in this view, that we get politics—domestic politics—out of SALT and SALT out of domestic politics. Next, it is equally important that leadership be able to demonstrate more benefits from SALT than risks attendant to a failure of SALT, although all would agree that the risks are real and significant.

Finally, from a conceptual aspect, the central importance of both the process and the product must be stressed. Both sides must somehow be convinced—an admittedly tall order, given the "extraneous" political realities—that real progress is as essential as a continuation of the process. Real gains—beyond, for example, token reduction in the overall numbers of delivery vehicles "from 2,900 to 2,800"—must be realized; a strategy developed in the context of a realistic appraisal of the dangers of continuing a mere reactive response pattern; and a firm consensus developed that the future of conflict may well be upon us if we fail to face such central issues squarely.

"It does not augur well . . ."

The New Faces of Conflict: Some Implications of the Military Innovation Process for 1980-2000

4

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Introduction

War derives its primary character from technology and, in turn, conditions the development of technology in a complex and often inscrutable manner. For example, the advent of nuclear weapons born in World War II has made large-scale warfare between the military superpowers much less likely; conversely, the risk of nonnuclear proxy wars has probably increased. Whereas international security depends upon the maintenance of stability in the central US-Soviet balance, the likelihood and character of regional warfare (such as the brief, high-intensity Yom Kippur War in late 1973) depend more upon local political factors and the relative capabilities of client states to import and utilize foreign military equipment.

Military technology has influenced the art and outcome of warfare more than any other single factor, with the infrequent exception of leadership genius. For instance, the Battle of Crécy in 1346 early in the Hundred Years' War stands out clearly as a turning point in the nature of warfare: the French were soundly defeated by a much smaller British army because their man-to-man combat weapons were no match for English longbows.¹ Six hundred years later, the controversial use of American nuclear weapons produced a rapid termination of World War II in the Pacific and became another turning point in military history, ushering in the nuclear age. However, weapon innovation is a global organic process and does not necessarily have political continuity or international justice as concomitants. The ascendancy of French artillery development begun in the mid-15th century by the Bureau brothers was a major factor in the sudden and overwhelming French victory in the Hundred Years' War; the French defeat at Crécy proved a misleading indicator of the long-term military future.

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This paper embeds its discussion of future technology into a geopolitical context—an approach that is especially relevant since the 75th anniversary of Japan's attack on the Soviet naval base of Port Arthur fell on February 8, 1979. The surprising outcome of the Russo-Japanese War of 1904-1905 clearly demonstrated that European "white supremacy" was not invincible. The unconventional paradigm of Japanese "electronic battleforces" will be used to illustrate the possible impact of non-nuclear military technology on warfare from a perspective which is not dominated by American doctrine or the NATO-first syndrome to which we are culturally disposed. More traditional paradigms of US tactical and strategic forces will be used to suggest how conventional European defense and strategic defense of the continental United States could play important roles in the future. Finally, the rapid emergence of space as a new military arena will be examined.

**Predictive Failures and
Fashions in Military Technology**

Before entering the core of our discussion, it is useful to consider two points about projecting the nature of future military technology and its possible implications for warfare. There is a long history of failures in the risky business of predicting future military technology; a notable example was written one century ago by Friedrich Engels:

The Franco-Prussian War [1870-71] marked a turning point which was of entirely new significance. In the first place the weapons used have reached such a stage of perfection that further progress which would have any revolutionizing influence is no longer possible. Once armies have guns which can hit a battalion at any range at which it can be distinguished, and rifles which are equally effective for hitting individual men, while loading them takes less time than aiming, then all further improvements are more or less unimportant for field warfare. The era of evolution is therefore, in essentials, closed in this direction.²

This rather stark failure of nerve and imagination has more recent counterparts.³ The most telling of these failures was a high-level governmental study of future technology in 1937

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which missed the development of jet engines, radar, inertial guidance, rocket-propelled missiles, electronic data-processing computers, artificial satellites, and—above all—nuclear weapons.⁴ All of these technologies were in use or under development within a few decades of the unfortunate forecast. Now that the process of technological innovation has been institutionalized, accurate long-term appraisals of future military technology might be even more difficult than in 1878 or 1937 since technological opportunities created by unpredictable scientific developments (such as the laser in the late 1950's) will be rapidly exploited, more often than not.

The second critical point relates to the persistent fashions and bureaucratic inertia which burden the innovative impulse with cumbersome intellectual and political baggage.⁵ For instance, biological and chemical warfare is highly unfashionable and unlikely to play a major role in warfare during the period 1980-2000. While the development and deterrent use of nuclear weapons have become quite fashionable, the widespread belief that crossing the nuclear threshold would be tantamount to unleashing a global nuclear war tends to counterbalance the strong technical and military interests in nuclear weapons.⁶ Moreover, strategic arms control has become very fashionable, being at least the centerpiece—if not the cornerstone—of Soviet-American relations.

On the other hand, conceptual directed-energy weapons (DEW) based upon high-energy lasers and particle-beam devices are distinctly unfashionable, even though they could prove to be one of the most significant military innovations of the period under discussion. The defense community is generally unfamiliar with the possible implications of DEW systems. Consequently, the bureaucracy is motivated to keep DEW technologies on the back burner until a critical mass of impressive lethality demonstrations can occur and attract the attention of general officers and high-level civilians in the Department of Defense (DOD). Such bureaucratic inertia serves a useful function by beating down technological interlopers that often prove to be nothing but expensive flashes in the pan. But it can be counterproductive if adversaries such as the Soviet Union pursue early prototyping and can follow through with full-blown technological surprises that have important military utility.

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Both of these points—the intrinsic difficulty of accurately appraising how future military technology will unfold and the stubborn fashions in developing and using this technology—will be revisited as we explore the focal questions and paradigms below. We remind the reader that the central purpose of American military power is to deter conflict and, in the event deterrence fails, to control escalation and produce favorable war termination with minimal losses to the United States and its national interests. Other objectives such as diplomatic leverage and recognized technological superiority are important ones but secondary to the basic goal of credible deterrence.

**Military Innovation as an
Enduring Institution**

Aside from the advent of nuclear weaponry, the period after World War II is unique in one important respect: unlike past periods, the process of military innovation has become institutionalized. Research and development (R&D) supported by the DOD constitutes more than 10 percent of the defense budget. Defense R&D is administered by a large full-time staff of professionals under the direction of the Under Secretary of Defense for Research and Engineering (USDR&E) who, as the acquisition executive for DOD, is responsible for about 40 percent of the defense budget corresponding to the R&D and acquisition of weapon systems. Consequently, the US military innovation process receives a great deal of Presidential and policy attention, as well as scrutiny from Congress and influential sectors of the American public. Compared with the slow and sporadic evolution of military technology from antiquity to the late 19th century,⁷ the pace and scope of American and Soviet military innovation are unprecedented. This basic fact might be controverted by those officers and civilians participating in specific programs and decisions who cope with the daily problems and complexities of the unwieldy military research, development, and acquisition (RD&A) system and its increasingly long acquisition cycles; nonetheless, it remains a fact and influences the pace and depth of changes in the nature of warfare.

The existence of Soviet-American competition is one of the chief reasons for this institutionalization of military innovation, which can be traced to the tripling of the DOD budget during the Korean war and the technological shock of Sputnik during the

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1950's. Since the price of becoming clearly inferior in a nuclear-armed world could be large—if not catastrophic—the ideological leaders of the old Cold War camps are compelled to pursue the competition in military technology with due diligence and vigor. The fact that SALT I was negotiated during the early 1970's indicates that the Soviet-American relationship has important co-operative aspects as well as the more visible competitive ones. Major US decisions about strategic weapon developments and procurements tend to interact strongly with the Strategic Arms Limitation Talks (SALT) process (e.g., the B-1 decision—related to the maturation of cruise missile technology—and the continuing controversy about the proper basing mode for the MX follow-on ICBM).

It is reasonable to assume that the Soviet military R&D process is similar to its American counterpart in pace and scope, if not in details and general style.⁸ In a very real sense, the competitive process of military innovation constitutes an effective (if not necessarily cost-effective) and realistic *surrogate* for large-scale warfare, in lieu of a major surrealistic exchange of nuclear weapons between the nuclear superpowers.⁹ It is useful to examine the currently fashionable concept of essential equivalence in which advantages in strategic force characteristics enjoyed by the Soviets are offset by other American advantages. To maintain the dynamic stability of the mutual nuclear equilibrium, either both countries must renounce future technological progress as being destabilizing or both countries must pursue military innovation in a "cooperative" manner.

The SALT forum provides a bilateral framework in which to discuss proposed rules for bounding the strategic innovation process, as well as an important political setting in which Soviet-American relations can be centered. Just as there are rules of war consisting of mutually respected restraints during physical conflicts, SALT provides an evolving set of rules for engaging the enemy on the technological battlefield of national and industrial laboratories. As a number of observers have noted, however, controlling qualitative improvements in strategic weapons is much more difficult than attempting to limit the quantitative aspects of the strategic competition.¹⁰

The products or outputs of the technological competition, at any given point in time, would condition the nature and outcome of warfare if it were to break out. This persistent contingency

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places a great deal of responsibility on those who make decisions about major weapon system developments and acquisitions for *both* superpowers. Moderately plausible scenarios can be written involving Soviet nuclear strikes against the MINUTEMAN fields and antisubmarine warfare (ASW) sorties against American SSBN's after a failure of nuclear deterrence, implying that perceived strategic vulnerabilities of land-based or sea-based missile forces could make a serious difference in the actual prosecution and management of warfare near the nuclear threshold. Indeed, many SALT critics contend that the Soviets' large civil defense program and continued military buildup reflect their intentions to achieve the type of strategic warfighting superiority over the United States that could have political significance (as well as military relevance, if necessary) during superpower confrontations.

Future strategic technology is likely to make nuclear war more "thinkable," especially since the next quarter-century might host the first few small-scale nuclear wars as the weapons spread to unstable countries which are less inclined to respect the nuclear threshold.

There is another reason for the surrogate nature of the technological competition: whereas the United States competes effectively in the world along the nonmilitary dimensions of foreign trade, exchange of cultural affairs and sociopolitical ideas, and international politics, for fundamental structural reasons the Soviet Union simply cannot do so.¹¹ This (unfortunate?) fact implies that the central focus of the bilateral competition must be military technology since this is the only area in which the Soviets can excel (after investing enormous resources, to be sure).

There will always be isolated conflicts in the Fourth World triggered by Soviet imprudence, such as those in Angola and Somalia. However, major Soviet adventurism is likely to be hostage to caution and conservatism, especially after the full implications of the incipient Sino-Japanese-American arrangement sink into the collective psyche of the Soviet leadership. If Soviet fears of political encirclement parallel the probable growth of this new trilateral relationship in the Pacific Basin, even more emphasis might be placed upon Soviet military technology since it could be viewed by the post-Brezhnev regime as the only relevant game in town.

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During the period 1980-2000, it could prove to be a very interesting game, indeed. The overblown rumors about Soviet development of a prototype charged-particle beam (CPB) device at Semipalatinsk have some (if only slight) basis in fact. It is rather unfortunate that the American media make so much of CPB weapon possibilities and tend to downplay the prospects of laser weapons, where most of the mid-term payoff resides (as clearly indicated by the \$200 million FY 1979 budget for the DOD high-energy laser R&D program, compared to only \$15 million for CPB). Whether or not the Soviets are driving hard for a breakthrough in the strategic technology of directed-energy weapons, both they and their American counterparts are poised to take advantage of such a breakthrough. This is true even though a breakthrough in certain DEW technologies could undermine the SALT process to such an extent that the surrogate technological competition might produce strategic instabilities that measurably increase the risk of nuclear warfare.

On the one hand, peacetime technological competition could produce strategic weapons such as space-based laser antiballistic missile (ABM) systems (see below) which jeopardize the dynamic stability of the bilateral nuclear balance, increasing the risk of nuclear escalation during future confrontations through reciprocal fear of preemption and the introduction of new strategic uncertainties. On the other, a strategic world dominated by defensive DEW systems which take the delicate edge off the nuclear balance of terror might be a much safer and more secure world over the long haul, as well as more consistent with the US constitutional imperative to provide for the "common defense," instead of the psychological deterrence of holocaust-like threats to which we remain naked and exposed. There is little doubt that the development of cost-effective DEW systems for ABM applications would cause the "block obsolescence" of the superpower nuclear-force Triads and change the basic foundation upon which the current strategic balance is based.¹² The key questions are: is this technical development in the cards, and would it be politically acceptable?

One of the differences between the contemporary institution of military innovation and the past slower evolution of technology relates to the fate of technological precursors. The Chinese inventions of an efficient curved saddle (about 200 B.C.) and rockets (about A.D. 1200) each preceded widespread use of

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these technologies by more than 500 years. Contemporary precursors tend to lead serious prototypes and full-scale development programs by a few decades, given the propensity of the modern military innovation process for seizing and exploiting opportunities created by new scientific findings or by new combinations of engineering developments. Given technological precursors of DEW systems which can be cost-effective ABM systems—and this is likely in the mid-1980's—the questions above may reduce to: *when* (or how soon) will laser BAMBI (Ballistic Missile Boost Intercept) systems become available, and how can the “inevitable” strategic transition from nuclear offense to laser defense be carried out smoothly?

Precision-Guided Munitions, Microelectronic Communications, and the NATO-European Theater

Most discussions of the technological aspects of future warfare would be incomplete without reference to the NATO theater and how military technology could alter the nature of warfare there. The advent of precision-guided munitions (PGM's) and advanced command, control, communications and intelligence (C³I) capabilities should go a long way toward restoring the conventional military balance in Europe, reducing our uncertain reliance upon the deterrent threat of tactical nuclear warfare that could save Europeans only at the high price of major urban destruction.¹³ There are many families of PGM's: antitank guided missiles (ATGM's) such as TOW, DRAGON and laser HELLFIRE; the COPPERHEAD howitzer shell which can achieve direct laser-designated hits on tanks from ranges of 15-20 kilometers; imaging infrared MAVERICK for highly accurate air delivery against armored formations; and advanced ATGM's such as terminally guided submunitions (TGSM's) having “fire and forget” features. NATO will probably emphasize high-technology PGM's and survivable, jam-resistant C³I as force multipliers to overcome quantitative deficiencies. During 1980-2000, European warfare could range from fast-paced exploratory attacks (that are quite limited and probing in nature) to much less likely massed armored assaults (that represent Soviet intentions to drive toward the English Channel).

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Joint NATO development of advanced concepts such as ASSAULT BREAKER—a highly leveraged system using a new missile to destroy second-echelon armored targets deep behind the forward edge of the battle area (FEBA)—will facilitate a strong conventional defense against large-scale Soviet attacks, thus helping to deter conflict in the absence of extreme provocations. The role of new generations of tactical nuclear weapons is dubious because nonnuclear concepts such as ASSAULT BREAKER have much promise and utilize hardware components that are already under development or at least technologically feasible, and longer-range DEW systems will ultimately produce an extremely hostile environment for missiles such as PERSHING. While the *presence* of tactical nuclear weapons in Europe will remain politically important as visible connectivity to the extended American nuclear deterrent, their military utility (which has never been high, due to the acute lack of a decent theory of how to use them effectively) will wane significantly.

One of the most interesting technical developments bearing on the nature of European warfare involves infrared mosaic sensors which might undertake tactical surveillance of theater battlefield events from platforms in space.¹⁴ Mosaic and HALO-type (high altitude, large optics) sensors based in space could make near real-time battlefield surveillance possible, greatly facilitating strategic warning and conventional European defense after the late 1980's and also making antisatellite (ASAT) capabilities a mandatory part of serious tactical warfighting capabilities. To the degree that many space systems are considered strategic in nature, the prospects for inadvertent escalation in future tactical conflicts might increase rather dramatically via ASAT connection—especially if proliferating space-based sensors *are* utilized in dual modes with combined strategic and tactical functions.

This last example illustrates one of the basic dangers of advancing military technology: it tends to weave new strands on the so-called escalation ladder, thereby increasing the likelihood of semiautomatic escalation in the absence of determined joint efforts to control escalation on the part of all combatants. Future battlefield surveillance capabilities based in space could be stabilizing if they provide better warning of hostile intentions;¹⁵ on the other hand, they could prove destabilizing during conflicts unless improved techniques for communicating escalation-

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control and bargaining messages among adversaries are developed and utilized. Indeed, what may be required transcends the technology of adversarial communication systems; "soft" technology of learning how to use them to control escalation—in the interest of both countries rather than simply in the national interests, narrowly defined—must be developed and exercised. The extremely important problem of war termination should be included under this requirement for developing the soft technology of adversarial communications.

A Japanese Paradigm for Future Military Technology

Japan is an increasingly affluent country with a GNP of about \$1 trillion, one-half the size of the American economy and growing twice as fast. Within a few years, the economy of Japan will be larger than the Soviet economy and its per capita GNP will exceed that of the United States. Moreover, Japan occupies an enviable position at the leading edge of innovation in micro-electronics, telecommunications, advanced materials, automated manufacturing, and other areas which strongly influence the maturity and advancing pace of military technology. The Japanese very large-scale integration (VLSI) program has the American semiconductor industry running scared, while publication of a blueprint for the next 15 years of Japanese space development prompted the National Aeronautics and Space Administration (NASA) to dispatch its Deputy Administrator to Japan on a mission of talking Japanese space planners out of their tone of technological autarky (Japan has launched more than one dozen satellites using indigenous vehicles). In the so-called Fukuda initiative, Japan will contribute about \$1 billion to American energy R&D efforts (primarily coal liquefaction and fusion) and expanding US-Japanese defense R&D cooperation appears forthcoming.

When Japan decides to breach the symbolic 1 percent barrier, its defense spending could climb rapidly during the 1980's, opening many new opportunities for the development and acquisition of advanced military technology which meets the mission needs unique to Japan.¹⁶ These include an emphasis on air and submarine defense, as well as ballistic missile defense if affordable technology becomes available to support ABM requirements. As Japan acquires F-15's, E-2C's, P-3's, and the

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like during the coming years, it will run into a "ceiling" and consider the serious development of autonomous defense technologies designed to meet its future needs. Recent reports of accelerating Japanese defense R&D spending suggest that missiles, torpedoes, and lasers will be emphasized. Indeed, some American military officers believe that the Japanese high-energy laser (HEL) program is second only to the two superpower HEL programs.

From the experience of the Yom Kippur War, one might anticipate intense and violent battles during the future which place a premium on effective C³I systems that provide field commanders (as well as political leaders back home) with accurate and reliable information about unfolding situations and threats. As a recent Defense Science Board Task Force on Command and Control Systems Management noted:

This information-rich character of the modern strategic and tactical battlefield is compounded by the advent of "smart" weapons which depend critically on timing and placement for their effectiveness.¹⁷

Whereas accurate information and its timely management are quite significant, dramatic improvements in microelectronics, such as large-scale integration (LSI) making possible inexpensive microprocessors, are outpacing efforts to utilize new electronics technology in battlefield systems. There are 27 microprocessors in the F-15 aircraft and more than 40 percent of the cost of the M-1 tank will be in fire-control electronic equipment. However, 70 percent of the Defense Department's military electronic equipment is medium-scale integration (MSI), not LSI, although known combat requirements for PGM's, TGSM's, tactical C³I, and other systems, exemplify the urgent need for getting large-scale (and eventually very large-scale) integration capabilities into deployed forces.¹⁸

There is little doubt that Japan will help pull the United States and especially the DOD into the LSI and VLSI worlds. Commercial Japanese competition in VLSI development is being taken very seriously by American corporations such as IBM and Texas Instruments; on the military side of the house, the DOD has established a 6-year very high-speed integration (VHSI) electronics R&D initiative to expedite innovation and product development in this important area. American technological

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superiority in military electronics derives in part from the existence of profitable civilian markets (which the Soviets lack) for numerous products of electronics technology. These markets are quite familiar with the high quality and innovative character of Japanese microelectronics, making the image of a future Japanese "electronic battleforce" not nearly as implausible as some might think.¹⁹

Since Japan is a maritime nation, successful emphasis on the antisubmarine warfare (ASW) problem might involve advanced undersea sensors such as adaptive beam-forming acoustic arrays using charge-coupled devices and sophisticated signal processing, space-based environmental sensing platforms (such as SEASAT-like maritime observation satellites already being planned), and ocean acoustic tomographic techniques.²⁰ It is an interesting commentary on Japanese priorities that their oceanographic talents leave much to be desired; the strong implication is that when Japan begins to climb up the ASW technology learning curve it might do so quite rapidly, with large benefits to the US-Japanese military alliance.

This point raises another aspect of the international connections relating to military technology. Japan and the European allies of the United States have relied heavily upon American R&D to support Western technological competition with the Soviets. Reciprocation in technical information transfer seems quite appropriate, now that one human generation separates us from the rebuilding after World War II. Should Japanese space or ASW developments begin to outpace their counterparts in the United States, it would be appropriate for us to obtain a return on the large investment we have made in rebuilding Japan by beginning to rely upon it for certain types of military technology. The well-known "not invented here" syndrome must be scuttled before we could utilize reciprocal technology transfers, the other parties willing.

An important area of military R&D which might be amenable to Japanese leadership is strategic in nature, but sufficiently distant from things nuclear that the understandably allergic Japanese will not be put off by the idea. Japan is neither locked into the Soviet-American ABM Treaty of 1972 nor has extremely broad financial and institutional investments in large nuclear-weapon forces. But Japan does have a postwar commitment to

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peace and nonaggression embodied in its MacArthurian Constitution which emphasizes self-defense and precludes nuclear deterrence as a strategic way of life. Given current economic trends, Japan will have a \$2 trillion economy in 1990, compared with the US and Soviet economies of \$3 trillion and \$1.5 trillion, respectively. By 1990, the 1 percent fiscal barrier to growth of the Japanese defense budget will have been long surpassed and the ambitious 15-year space development program will be nearing completion. Contemporary Japanese interest in large structures in space and solar-power satellites indicates that the long-range prospects for Japan in space are not inconsistent with USAF and DARPA (Defense Advanced Research Projects Agency) visions of beam weapons deployed there to attack satellites and ballistic missiles. There are attractive opportunities for Japan in this area of long-range DEW technology, as well as options for US-Japanese cooperation which involve much greater reciprocity than in the past.

Naturally, there are possible sources of conflict. The Soviets would not sit idly by as Japan deployed a hypothetical laser BAMBI system with tacit concurrence by the United States. Along more speculative terms, the Soviet-Japanese competition could escalate from its current emphasis on harassment of fishing boats and Tokyo-express penetrations of Japanese airspace to a serious technological competition which involves strategic technologies in ASW, ABM, and other areas.²¹

**The American
Strategic Paradigm**

On 10 February 1954—exactly 50 years after the Japanese attack on Port Arthur—the Strategic Missiles Evaluation Committee (SMEC) headed by John von Neumann reported the possibility of a major technological breakthrough in nuclear warhead size and the probable resolution of other technical problems associated with the development of intercontinental ballistic missiles (ICBM's) within a few years. One month before the SMEC report, Secretary of State Dulles articulated the new strategic doctrine of "massive retaliation" at the prestigious Council on Foreign Relations. One month after the SMEC report, a "Shrimp" shot in the Operation Castle series of nuclear tests completely revolutionized ICBM design by demonstrating the validity of the SMEC conclusions.

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Consequently, one-quarter century ago (and almost 4 years *before* the launch of Sputnik shocked Americans into recognizing the global nature of technological innovation), the fundamental shape of the strategic nuclear age was being determined by a combination of technology and policy. After the attempted end-run in Cuba in 1962, the Soviets have sustained a sharp military buildup to close what proved to be the "inverse" missile gap. This buildup has provoked anxieties that our primary adversary actually seeks strategic superiority rather than (acceptable?) parity in offensive nuclear power. Notwithstanding good intentions expressed in SALT,²² Soviet investment in new ICBM's and sea-launched ballistic missiles (SLBM's) has accelerated during the past 6 years. Increasing accuracy and "MIRVing" (or fractionation) of new classes of large Soviet ICBM's, in particular, have contributed to the American debate about survivability of fixed land-based ICBM's during the 1980's, as well as whether essential equivalence and strategic stability (those two wonderful buzzwords) can be maintained under a SALT II regime.

The current debate about the viability of the US strategic nuclear-forces Triad and the future maintenance of essential equivalence with its Soviet counterpart is extremely short-sighted. Mid-term developments in ABM technology are likely to undermine the technical and political integrity of the ABM Treaty of 1972, even though the US Army's ballistic missile defense (BMD) program has less than maximal bureaucratic incentive to pursue high-payoff technologies with enough vigor to make technological surprise happen to our adversary (rather than simply hedge against the possibility that we might be surprised), to use Ruth Davis' words. Since 1958, the post-Sputnik age has hosted a running debate on the technical feasibility of ballistic missile defense (BMD—perhaps a more appropriate term than ABM, although the latter is "official" since it is connected with the 1972 Treaty). This debate peaked in 1969 when President Nixon approved the SAFEGUARD nee SENTINEL ABM system, only to be nearly defeated by Congress, and then utilized American BMD technology as a bargaining chip in the SALT I negotiations.

However, BMD technology is alive and well, if not enjoying a rebirth just yet. The Army's \$230 million R&D program hedges against SALT breakout and attempts to preserve US technological superiority in this area. When Harold Brown was Director of Defense Research and Engineering, he stated that

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once one is in the BMD business, one does not get out of it even if it is difficult to find a satisfactory solution.²³ This view is especially interesting since many observers of the national security scene understand that BMD is and was revolutionary: it threatens the "technological plateau" thesis which holds that additional strategic technology could no longer enhance national security since nuclear deterrence is an unalterable fact of international life and successful actions could be taken to offset any BMD system, were it deployed.

Time and technology move on, however. The remainder of this century is likely to set the stage for the advent of strategic technology which will cause the nuclear-force Triads of both superpowers to become increasingly obsolescent. The realization that DEW systems are likely to be developed for a range of military applications (including ship defense against cruise missiles and the ASAT mission) is beginning to penetrate the resisting collective psyche of the American defense community. Although particle-beam research began in the early 1950's, it has been insignificant compared with high-energy laser R&D after 1969, notwithstanding the overblown Semipalatinsk controversy.

High-energy laser technology became interesting (and increasingly expensive) after the gas-dynamic laser was invented; since then, the Defense Department has expended more than \$1 billion directly on HEL research and development to explore weapon feasibility. The Department of Energy spent somewhat less on related HEL technology activities (such as the laser fusion and isotope separation programs). The technological immaturity of HEL is demonstrated by the absence of prototype laser weapons and persistent slippage of prototyping schedules. Conversely, this immaturity itself demonstrates the large room for improvement, given the political commitment of R&D resources. An increasing number of HEL watchers in the Air Force, DARPA, and elsewhere seem to believe that laser weaponry might ultimately prove more than a match for ballistic and airbreathing nuclear-weapon delivery systems. This distinct possibility would imply the creeping obsolescence of the strategic Triads, a process which could transform into a gallop by the turn of the millennium.

If HEL technology begins to take us into, say, a laser BAMBI world, what are the implications for nuclear deterrence and conflict risks? If in the long haul (e.g., by the mid-21st cen-

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tury) DEW systems will dominate traditional techniques for delivering conventional and nuclear munitions, the military scene will have made a complex transition from the PGM world (in which increasingly accurate nuclear and nonnuclear weapons are preeminent) to a DEW world (in which PGM's are increasingly vulnerable to extinction). Such is the dynamic process of technology; it gives with one hand and takes with the other (comparable to Shumpeter's economic theory of creative destruction).

The central long-term issues are: Would a DEW world be safer and more stable than a PGM world? Can we make a relatively smooth transition from the latter to the former or would this transition introduce serious instabilities that increase the likelihood of nuclear warfare and/or lower the nuclear threshold? Will countries such as Japan occupy the leading edge of this strategic technological transition if the nuclear superpowers remain locked into the ABM Treaty? Will the politics of laser BAMBI development be sufficiently different in the Soviet Union (and possibly in Japan) that initial reluctance of American leaders to embrace such revolutionary technology will place us into a tail chase, thus constituting a long-term threat to US national security?²⁴ Will the PGM-to-DEW transition jeopardize the SALT process as well as SALT agreements, undermining detente between the United States and Soviet Union and opening a new phase of the Cold War?

There are no definitive answers to these (and other) questions, but the very fact that they must be addressed—given the prospective emergence of DEW systems—suggests that the impact of this new family of military technology will be significant and global.

It is useful to address another question: How might the politics of laser BAMBI technology become a new element of national power and a new source of conflict during the 1980's and beyond? Given the widespread perception that this military technology could break the delicate balance of terror (or melt the nuclear Damoclean sword, as you wish), American allies will certainly want a piece of the action as well as credible guarantees that they will be protected by the new "laser umbrella." To degree that extended deterrence will be less credible during the strategic transition towards defensive emphasis, NATO-European allies might argue against deployment of laser BAMBI,

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especially if first-generation systems cannot handle depressed-trajectory Soviet intermediate range ballistic missiles (IRBM's) or cruise missiles which operate deep into the atmosphere. Moreover, small (often tactical) nuclear weapons could be delivered by Soviet aircraft and missiles which cannot reach the continental United States (CONUS) and constitute nuclear threats only to Europe (or Asia). Development of any US laser BAMBI system for defending CONUS against Soviet strategic nuclear forces might shift the focus of the strategic confrontation even more to Europe and Asia, possibly protecting our Nation at the expense of impairing relationships with our allies. Indeed, one political scenario for American laser BAMBI development would involve increasing insularity, at least until later generations of DEW BMD technology could accomplish global defense against virtually all material aerospace threats.²⁵

So much for a taste of political controversy with our allies about the desirability of DEW systems; what about our adversaries? Indeed, if the Soviets could dominate the entire globe with the exception of the United States, that might be fine with them. On the other hand, a defensible United States which retained the capabilities and intentions for intervening to deter or cope with Soviet military actions around the world would pose an enormous problem. Just as Soviet willingness to negotiate SALT I interdicted American BMD technology one decade ago, it could again. Indeed, Article V of the ABM Treaty of 1972 specifically bans development or testing of space-based ABM components or systems.²⁶ If Soviet leaders saw laser BAMBI coming *and* credited the United States with a significant lead in this new technology, they might be disposed to preserve the integrity of SALT I at all costs, including foregoing opportunities for dabbling in international mischief.

Holding Soviet adventurism hostage to the technological threat of laser BAMBI could prove short-lived, however, if the Soviets decide to develop their own laser BAMBI technology under political cover of the treaty, given verification which is adequately ambiguous.²⁷ Scenarios for injecting adequate ambiguity could include Soviet declarations that their "research" in space-based HEL technology is directed toward transmission applications for solar power satellites (SPS). After all, wasn't the United States increasingly interested in such SPS alternatives (to microwaves) until Congress put a halt to that expensive business

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due to a combination of fiscal austerity and New-Class sentiments (preferring small-scale, decentralized solar energy technologies instead)?

**Space, the Fourth Arena,
and the Strategic Tetrad**

Both the United States and the Soviet Union possess a strategic "tetrad," although it is not known by this unconventional name. Each superpower possesses a three-element set of strategic nuclear forces and a one-element set of strategic reconnaissance and early warning spacecraft. These satellites are so important as national technical means of arms-control verification that the ABM Treaty bans interference with the national technical means. Indeed, it is difficult to conceive a sound SALT regime in which adequate verification could be accomplished without primary reliance upon reconnaissance satellites.²⁸ As the fourth element of each superpower's current tetrad, these space-based optical sensors are precursors of the advanced strategic laser weapons discussed above.

The arms race in space is being rediscovered. Recent articles herald the fact that the United States is shaping a technological response to the Soviet hunter-killer antisatellite system that was first tested in 1969. Unlike the three nuclear force components of the strategic triad that are only designed to operate in or near space, the new weapons would be based in space, sharing a unique vantage point with reconnaissance and other spacecraft. It is from this synoptic vantage point of space that their crucial strategic advantage would derive: the new family of space-based weapons could, in principle, interdict all three elements of the adversary's offensive triad, thus constituting a non-nuclear defensive system of awesome potential. But the contemporary rediscovery of the arms race in space has barely confronted this far-term possibility, emphasizing instead options which are more clearly visible on the technological horizon.

The Prospect of Armed Conflict in Space

During the past 2 years, the level of official and public attention being paid to the possibility of conflict in space has increased measurably. In March 1977, Jimmy Carter became the first American President to mention this possibility when he revealed his suggestion to the Soviet Union that "we forego the

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opportunity to arm satellite bodies and also forego the opportunity to destroy observation satellites."²⁹ At the same time, a high-level defense official stated in congressional testimony that by their full-scale resumption of antisatellite (ASAT) interceptor testing, the Soviets were creating the prospect of a new dimension of conflict—war in space—and the consequences of a Soviet ASAT advantage to the future balance of military power could be no less than "catastrophic."³⁰

Seven months later, on the 20th anniversary of Sputnik I, Secretary of Defense Harold Brown disclosed that the Soviet Union had developed "an operational capability that could be used against some satellites."³¹ After admitting that he found this situation somewhat troubling, Secretary Brown stated that the United States is currently engaged in the "preliminary exploration" of an ASAT system. He clarified these points in his first annual report to Congress:

As the President has clearly stated, it would be preferable for both sides to join in on an effective, and adequately verifiable ban on anti-satellite (ASAT) systems; we certainly have no desire to engage in a space weapons race. However, the Soviets with their present capability are leaving us with little choice. Because of our growing dependence on space systems we can hardly permit them to have a dominant position in the ASAT realm.³²

It is interesting to note that early Soviet interest in this area dates back to the 1960's when the "antispaces defense," or *Protivo Kosmicheskaya Oborona* (PKO), was created as a component of the National Air Defense (*PVO Strany*) for destroying the enemy's cosmic means of fighting. After the Outer Space Treaty of 1967 was negotiated, the Soviet leadership apparently authorized a public relations campaign to convince the Russian population that the United States was preparing for space warfare, possibly to justify its own antisatellite activities.³³ By June 1978, during the first preliminary US-Soviet talks on ASAT weapon control in Helsinki, American officials were quoted as stating that US technological supremacy in space would continue and the Russians must recognize that if the United States gets serious about space defense, "we could clean up the sky in 14 hours."³⁴

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Emergence of the Space Defense Mission

There is little doubt that we are reaching a major turning point in the utilization of space for military purposes. Both superpowers have developed military spacecraft for early warning of attack, strategic reconnaissance, communications, navigation, and global meteorology. Most defense analysts believe that such satellites, on balance, have enhanced stability. For example, modernization of the Soviet-American hotline was initiated by a 1971 agreement to route the Direct Communication Link through a combination of American and Russian communication satellites. Surveillance satellites have enabled both nations to verify compliance with the SALT I agreements signed in 1972. More recently, the Apollo-Soyuz Test Project with its well-publicized "handshake in space" appeared to extend the scope of detente between the United States and the Soviet Union.³⁵

On the other hand, the potential for advanced laser weapons in space is so attractive that prudence argues for the timely development of these new weapons. Sober analysis indicates that the current generation of short-range Soviet ASAT interceptors does not pose a serious threat to most American satellites since they are clearly out of reach of these low flyers. Moreover, the cost of ASAT attack on the entire constellation of important American satellites could be excessive if one or more ASAT interceptors would be required for each target satellite.³⁶ Laser-armed spacecraft, however, are quite another matter since they could have much greater lethal ranges. Multishot, space-based lasers might be developed for sweeping orbital rings of adversary satellites in the far term.

An important sign that the space defense mission is being taken increasingly seriously in the United States is the clear trend toward upgrading space surveillance capabilities. The existing network consists primarily of ground-based radar sensors, most of which are deployed for purposes other than space surveillance (e.g., ballistic missile warning), and this network has a very limited capability to detect objects above 3,000 nautical miles in altitude and has gaps in coverage below this altitude.³⁷ When fully operational in the early 1980's, the Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) system will replace the sensitive Baker-Nunn cameras that supplement the radar sensors but have slow response times. Through a combination of fiberoptics, low-light-level television, and advanced computer software, the GEODSS sensors will

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provide near real-time surveillance of space out to geosynchronous altitudes.³⁸

The long-term answer for time-urgent space surveillance up to geosynchronous altitudes appears to be the use of space-based optical sensors. Under its Mosaic Sensor Program (MSP), the US Air Force is developing a unique infrared sensor with such high sensitivity that tactical surveillance of theater battlefield events would be possible, as well as fine-grain characterization of ballistic missile attacks. The MSP technology is judged to be relatively low risk compared with the Defense Advanced Research Projects Agency program for advanced focal planes called HALO (high altitude, large optics). In the early 1980's, a joint space experiment is planned for the Air Force MSP and DARPA's mini-HALO programs which will set the stage for decisions on the next generation of space-based systems for space surveillance.

The prospect of an effective ballistic missile boost-phase interception system based in space would undermine nuclear deterrence—the doctrinal basis for the current strategic balance—by posing a decisive technique for coping with the adversary's triad of offensive nuclear power. Unlike first-generation BAMBI concepts studied in the early 1960's, vast quantities of rocket interceptors deployed from large space platforms would not be required. A laser BAMBI system would require hundreds of platforms if the weapon range is 1,000 kilometers, but only tens if the weapon range can be extended to 5,000 kilometers.³⁹ Laser weapons would attack ballistic missiles during boost when the number of targets is small, detection and discrimination are relatively simple, and vulnerability is maximum. The key to extending the lethal range of laser weapons lies in *precision* pointing and tracking, and DARPA's high-energy laser program concentrates on both the development of efficient infrared chemical (and visible electrical) laser devices as well as the precise pointing systems and large optics required for space-based laser systems. Moreover, major feasibility demonstrations are being initiated by DARPA to establish the practicality of laser systems to achieve the performance levels required for space applications.⁴⁰

Perhaps the most articulate statement on the prospects for space as an arena for laser weaponry was provided by George Heilmeyer, former director of DARPA, in his statement to Congress for FY 1978:

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Are there technologies on the horizon that could make possible a space-related use of high energy lasers and could such a laser system in the hands of the Soviets threaten our vital satellite network and strategic deterrent capability? Conversely, could such a laser serve the United States in some way? . . .

Even two years ago some of these questions would have seemed like something out of a modern day Jules Verne novel. However, as a result of DARPA initiatives, while difficult technical problems remain, the technologies to answer each of these questions in the affirmative are on the horizon *today* and require little in the way of major unknown, conceptual breakthroughs to make visionary answers to these questions a reality. . . .

It is my belief that the high energy laser in space could represent a Sputnik-like event . . . a technical achievement which could influence the perceptions of foreign countries as to who is the leader in defense-related technology. Such perceptions could have serious political implications in view of more obvious trends in other areas.⁴¹

If Heilmeier is correct, an upheaval in strategic technology is imminent which could have very important implications during the next few decades.

Laser Technology and the Strategic Debate

To highlight just how tense the situation might become when advancing laser BMD technology begins to confront the ABM Treaty in a MAD (mutual assured destruction) world, consider the following example. Richard Garwin, a prominent defense analyst, has argued that most kinds of laser weapons can be ruled out as not cost-effective or vulnerable to counter-measures. On the other hand, he implicitly admits that space-based laser BMD weapons might have a unique role in the spectrum of strategic weapons, but argues that they will never be deployed on political grounds:

A space-based ABM . . . fails as a practical candidate for deployment if only because neither the United States and [sic] the Soviet Union would tolerate

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the other's gradual deployment of such capability. Rather, nuclear-armed interceptors would be used to attack the imagined laser-bearing satellites as they were being readied to orbit over a period of months.⁴²

This very provocative statement about the American response to hypothetical Soviet deployment of space-based weaponry indicates the extreme lengths that some advocates of MAD will go to cope with the unpalatable conclusion that the basic structure of MAD and nuclear deterrence is not terribly resilient to *effective* BMD system concepts, and the march of time and technology will eventually make such concepts eminently feasible.

The speculative issue concerns the exact timing and detailed process by which the ABM Treaty unravels, not whether it will occur in the first instance. Thinking about the technical prospects for advanced space-based optical sensors and weapons is not nearly as "speculative," the polite phrase used by many defense intellectuals who prefer not to face up to the emergence of new strategic technologies with implications which are disturbing to their world view. The second ABM debate could occur as early as the mid-1980's, depending on how rapidly HEL technology advances and how the interconnected political milieu—with its domestic, bureaucratic, and international dimensions—actually develops. The projected lifetime of an MX follow-on ICBM force (with an initial operational capability in the 1985-87 period) extends well into the 1990's when a laser BMD system cannot be confidently excluded from serious consideration. Consequently, the current strategic debate must develop an approach for examining the distinct possibility that laser BAMBI could throw a monkey wrench into the traditional dispute about how to reduce pre-launch vulnerability of land-based missile forces by introducing the new strategic uncertainty of *post-launch vulnerability*. Putting too many "eggs" (multiple independently targetable reentry vehicles, or MIRV's) into too few "baskets" (only 200-300 MX missiles) might conveniently open the door for Soviet development of laser BAMBI systems that could deal more easily with this threat than with numerous unMIRVed ICBM's.

There are serious problems in a prospective laser BAMBI world of the 21st century. Assuming that we could get there from here without running a high risk of Garwinian nuclear attacks

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that could trigger the holocaust we are so anxious to avoid, space might be populated by laser-armed satellites owned by a growing number of countries. Major and medium powers will have legitimate security and prestige needs for these new strategic weapons, just as such nations now require nuclear arsenals. Indeed, the problem of laser weapon proliferation might take over where nuclear proliferation leaves off, since countries such as Japan would probably prefer to acquire laser weapons for self-defense purposes. If space becomes crowded with fleets of laser-armed battle stations, the risks of provoking laser duels or of preemptive (or anonymous) attacks on another country's fleet might increase substantially. The laser superpowers (possibly including Japan) will be able to afford the deployment of heavily armored fleets, but even medium-energy laser weapons on smaller spacecraft of adversary fleets might be capable of blinding the optical sensors that are so necessary for precision tracking and extremely stable beam pointing over long distances in space.

Potential situations for conflict in space are relatively abundant in this setting. For example, airborne Israeli laser weapons might be used to deter Soviet actions in the Middle East by threatening the speed-of-light destruction of critical Soviet spacecraft in low orbits. To the extent that Soviet dependence upon important space systems has increased, European laser weapons in space might prove effective as a more credible nonnuclear deterrent of Soviet adventurism than US theater nuclear weapons or British-French *forces de frappe*. Space might be viewed as an attractive arena for early hostilities that demonstrate resolve during a crisis without being too provocative, and the limited use of laser weapons in space might be considered as a technique for establishing escalation dominance in a tense situation on the surface of the Earth. Unfortunately, there is plenty of room for speed-of-light preemptive instabilities in a space environment filling up with laser ASAT and BAMBI weapon systems, a factor that should give pause to those who believe that space-based lasers would become some kind of strategic panacea.

Because lasers are not weapons of mass destruction, it would be difficult to justify a "laser threshold"—a new firebreak above which escalation of a conflict involves new types of risks.

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There will be fewer constraints on first use of laser weapons, especially in space where damage to property and human lives is less likely to occur in a provocative way. Laser warfare in space may be more likely than nuclear warfare on Earth. The danger of speed-of-light preemptive instabilities could be significant if a country believes its defensive shield is vulnerable to successful laser attack which could, in turn, open it to nuclear attack.

If the US edge in laser BAMBI technology is perceived as this clear-cut by the Soviet leadership, the risk of an "end-run" attempt such as the Soviets attempted with Sputnik or in the Cuban Missile Crisis might be relatively high. The Soviets have not undertaken their costly strategic buildup only to see its military and political utility go for naught as the fourth component of the American tetrad is weaponized. For this reason alone, Garwin's suggestion that the gradual deployment of any laser BAMBI system might be politically intolerable cannot be dismissed lightly, especially in view of the large US-Soviet asymmetry in advanced space technology. Movement into the transitional period when neither strategic defense nor offense is clearly preeminent could be very difficult and fraught with dangerous instabilities.

Realistically, the problems of a two-sided laser BAMBI world are close to us in time and significance. The clear superiority and dynamism of American space technology is exemplified by the development of Enterprise-class reusable space shuttles which will be able to ferry almost 30,000 kilograms of cargo to and from low orbit,⁴³ and by the increasingly serious consideration given to proposals for the development of large solar-power space stations connected to Earth by microwave or laser beams. Given the national commitment, there is little doubt that an American laser BAMBI system could be developed and deployed by the late 1990's which would be more survivable and reach out farther than any comparable system the Soviet Union could muster. The Soviets have little more than a mini-shuttle in development and might require their expensive large Type-G launcher to deploy heavy first-generation laser weapons into space.⁴⁴ While the Soviet system might be deployed in low orbits, the American system could be bound for mid-altitude orbits (around 3,000-5,000 nautical miles) to provide better coverage and increased survivability for a smaller constellation of longer-range weapons.

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An example of the destabilizing potential of laser BAMBI relates to the current leading option for an MX ICBM force in a multiple-aim-point (MAP) mode: 4,000 nearly empty silos which house about 200 missiles that are periodically redeployed in a shell-game fashion. If SALT II redefines a ballistic missile launcher to comprise an entire MAP complex, then each superpower would be permitted to construct thousands of new hardened silos. The SALT regime does not limit the production and storage of ballistic missiles. Hence the advent of laser BAMBI and/or subsequent breakdown of SALT could generate severe pressures in both superpowers for the rapid deployment of thousands of new ICBM's to fill the new silos—an offensive arms race with quite disturbing implications. This post-SALT breakout possibility would be especially troublesome for the United States, since the Soviet Union might have a number of open ICBM production lines while the United States would have only one. Indeed, acquisition surprise could prove to be more risky than technological surprise in such a scenario.

Conclusions

It would be a sobering experience to be able to watch the first flights of the Wright brothers at Kitty Hawk in 1903, the same year in which the Russian schoolteacher Konstantin Tsiolkovsky published the main results of his extraordinary work, laying the scientific foundations for astronautics 76 years ago. How accurately could we have predicted the future evolution and military significance of military air power at that time? The early military uses of airplanes emphasized reconnaissance and first-generation US Army aircraft were owned by the Signal Corps. As it became important for each side to destroy reconnaissance planes used by the other, aircraft were made faster and armed with machineguns—thus the fighter plane was born. But military aircraft came into their own only during the Second World War, leading to creation of the Air Force as a separate US military department in 1947. Will spacecraft follow a similar evolutionary pattern, in which the space-based sensor platforms constituting the fourth component of the strategic tetrad are eventually armed with directed-energy weapons, operated in the far-term future by the US Space Forces?⁴⁵

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Convenient myopia will not cover up the facts that laser weapons are moving toward engineering reality from the domain of science fiction and that future wars are likely to be fought in space as well as on Earth. Laser BAMBI systems will be mixed blessings, not strategic panaceas. Expectations are unrealistic that human conflict could be attracted completely away from Earth by the deployment of powerful space weapons in the hope that symbolic proxy wars—things fighting things in space—might constitute effective surrogates.

On the other hand, it is equally unrealistic to expect that BMD research and development could be pursued for much longer without creating the technological surprises it is designed to hedge against. By its nature, the space defense mission includes most of mainstream BMD, since interception of strategic ballistic missiles in flight trajectory has many of the attributes of antisatellite attack. The maturation of space defense in the United States will accelerate the development of space-based laser weapons. Weaponization of the fourth component of the strategic forces tetrad will threaten the long-term viability of its nuclear subset, the triad, with high short-term risks and long-term benefits.

The SALT regime will become increasingly vulnerable to the advancing thrust of directed-energy weapon technology, especially as high-energy lasers undergo space experiments. The SALT process is much more important than its achievements. It is this process of Soviet-American negotiation which must be preserved during the breakdown of the ABM Treaty if we are to manage a successful transition, via the tetrad, toward a softer world in which nuclear weapons are deemphasized. **Technology and politics have conspired to produce the MAD world. This combination will be needed even more to get us out from under the continuous threat of nuclear war, since this problem has no solution which is purely technical or purely political. With a few decades of continued good luck and hard work, we can find a softer strategic path into the new millennium. While luck has been with us so far, as Fred Ikle notes: "Strategic thinking must and can find a new path into the twenty-first century."**⁴⁶

In the meantime, European warfare would involve increased use of antiarmor PGM's and more effective C³I systems. The Japanese and other countries will develop better ways of fighting antisubmarine warfare to defend their economic sea lines of

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communication. The US military innovation system will continue to produce important evolutionary improvements in a broad spectrum of technologies. Space defense will emerge as a new mission area with highly significant ramifications. And political determinants will continue to dominate the risk of warfare, even though the new faces of conflict will be largely dependent upon technological directions.

Discussion On The New Faces of Conflict

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The issue of size, throw-weight and siting of the MX missile should not be the central issue in the strategic programs debate. The central issue should really be the utility of any strategic delivery vehicle in a beam weapon environment in the year 2000. . . .

The technological *differentness* of future conflict, axiomatic as it may seem to be, is also not the central issue for the defense decisionmaker as he grapples with the uncertainties of an indistinct future. In a discussion framed by Dr. Smernoff's thoughtful attempt to embed his perceptions of where technology is going into a geopolitical context, this discussion tried to explore the decisionmaker's problem.

The real possibility that second and third iterations or families of technologically "different" weapons systems will be available by the end of the century is far from a prediction that they will be in place and operational. The mismatch between the possible and the probable dominated this exploration.

Political and Social Dimensions of Military Technological Innovation

First of all, one must not accept the conventional wisdom that *military technological innovation is an enduring phenomenon*, without making some important conceptual and historical distinctions. While it is true that there has been a consistent progression of technological *knowledge* over the centuries, the *military application* of this knowledge has taken place during a very

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discrete number of narrow "time windows" when the needs of belligerent societies stimulated such concepts as modern armor (1914-1917), battlefield mobility (1938-1940), all-weather bombing (1942-1945), and strategic nuclear missiles (1954-1960). Today, as one panelist carefully noted, "the menu of available innovative technologies simply does not sit comfortably in the current social climate which views such military applications as a bad thing." Unless a starkly ominous *Soviet* window of technological advantage captures popular imagination and becomes obvious to the *political* leadership of the country, "the timetable for the kinds of technologically advanced systems forecast by Dr. Smernoff is bound to slip badly." This *slip-page* is a direct function of the *unfashionableness of defense* and the twin difficulties of—

- bringing radical, novel and agonizingly expensive military systems on the line *absent a clear and compelling political and social perception of immediate need*; and,
- developing a strategic, tactical and doctrinal framework to employ these systems *absent any environment in which they can be "use tested" to understand their capabilities completely.*

"If we could pull out, from the possible future, any one of a vast number of weapons concepts which would be technologically apt for the common defense, we would have a considerable political argument today about its propriety for use." This possible future holds the transition from nuclear weapons to other kinds of force applications—directed energy and laser weapons. It holds the development of an acknowledged strategic tetrad, which is clearly emerging as the role of space warfare becomes better understood. And it holds out the possibility that perhaps future wars will be less ghastly if fewer people suffer, if less of a linkage exists between warfare carried out in the space environment and traditionally

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devastating concepts of land and sea warfare. But the decision to embrace this possible future is a *political and social* decision which far more strongly defies accurate forecasting than does the potential for technological growth.

Part of the difficulty in predicting this political and social dimension of the decisionmaking climate is imbedded in our perception of the current mood of the country and our very recent memory of the past decade of relative decline in military enthusiasm. *These moods may change.* The year 1989 will be the 200th anniversary of the Constitution of the United States. More of us will be reading the Constitution and its words about "providing for the common defense," asking ourselves if the founding fathers had "political deterrence" in mind—or *real defense*—when they wrote those rather explicit words. People may be asking, by that year, whether we have really provided for their defense or have we instead merely filled a threatening technological and military gap with "policy and platitudes."

Another part of the difficulty in predicting the political and social acceptability of the "military things" we know are feasible is that the politics, typology—even the vocabulary—of new weapon development in the United States over the next twenty years are bound to *diverge from the experiences of the past*. Weapons soon available will no longer fall into the "old" categories—strategic offensive, conventional defensive, and the like. We can expect the emergence of a whole family of multipurpose systems which may not only be nonnuclear, capitalizing on new force technologies, but also nonexotic, using old weaponry ideas in newer, multipurpose, imaginative ways with fairly exotic delivery modes. These new weapons, difficult to characterize as to purpose, will have difficulty "fitting in" with the traditional political constraints of arms control dialogues and will suggest whole new political and conceptual frameworks with which the international community must come to grips.

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Still another difficulty in forecasting the political prerequisites for any of the alternative military technologies to emerge is the number of profound dilemmas which the military programmer and the defense decisionmaker have to face in evaluating the alternatives themselves.

Do we, for example, emphasize the "common defense," drawing from the constitutional terminology, or do we emphasize—in our military strategy, in our long-range planning, and in our orchestration of the other elements of national power—deterrence? Obviously, national strategies based on political, economic and cultural interdependence, on the one hand, and others based on deterrence through mutual assured destruction, on the other hand, are bound to result in essential differences in military establishments; will either be what our forefathers had in mind?

Do we, as another example, take a large investment risk in expensive, innovative technology or do we use the same assets, in a fiscally constrained environment, to buy more state-of-the-art "tried and true" traditional weapons to capitalize on numbers and the concentration of force?

Do we, finally, place our faith in promises of "absolute weapons" now on the horizon and plunge into their development unskeptically, or do we recall the unhappy history of such "super weapons" of the past—the dreadnought, the Maginot Line, the MIRV—and hedge our bets more carefully?

But to some, the question of a perceived lack of political will was not the central question driving the future of military technology. Indeed, such "lack of will" may only be an example of large group behavior phenomenon, as an enormously complex national security community attempts to function in a terribly constrained and complex institutional setting.

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Perhaps, instead, the problem is more structural than conceptual or philosophical. One panelist suggested that this complex national security community in government simply cannot deal with alternatives consistently, particularly where issues and constituencies are intertwined as they are in the defense debate. "In the year 2000, when the Navy is down to its last six ships, we will still be arguing whether to build a nuclear or conventional carrier!"

Doctrine and Military Innovation

Perhaps, on the other hand, the problem is one of a certain tension between *doctrine*, rather than political will, and technology. In this view, the problem of slippage in the timetable of the technologically "do-able" has its root, not in politics or social causes, but in the *failure of the military establishment to "help the technologist" develop the things that the soldier needs.*

Agreeing, for the most part, that tactical innovation, in its broadest sense, is as important as military technology, and that both flourish when the needs of the society and the military come together to foster it, less than complete agreement emerged on the nature of the relationship among *politics, doctrine, and innovation in warfare.*

The example of the Assault Breaker concept seemed to find itself on all sides of the discussion. Assault Breaker applies highly sophisticated, frighteningly expensive technology to redress an imbalance in weapons systems 60 years old—the manned tanks of the Warsaw Pact and NATO. Is it an example of a *technological evasion* of the basic *doctrinal* land warfare maneuver problem where technology is applied to substitute for poor or poorly developed *doctrine*? Or is it an example of a *technological evasion* of the basic *political* problem, that given the proper level of NATO defense expenditure commitments, there would be no tank imbalance to redress?

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On a broader doctrinal level, does technology lead a lagging doctrinal methodology, or at any given moment, is doctrine the spur to technology since the soldier has only today's technology with which to fight? Can the technologist help the soldier to grasp the initiative in battle, or is the American soldier always foreordained to react on the battlefield? Is the technologist's problem one of giving the soldier a higher P_k (Kill Probability) in his weapons or is it one of fielding an aggregate system for which he currently has no doctrinal need or use *because he has never thought of such a system*? Is the problem one of vision? Can, for example, the technologist "solve" the training, resupply, reinforcement, and logistics problems that the soldier faces in attempting to defend NATO? Should he try?

In a discussion which was dominated by the undercurrent of understanding that, despite technological *potential*, nontechnological inhibitions would have far more impact on the battlefield of the future, rudimentary consensus coalesced around the following summary points:

—Political will, social climate, resource availability, military doctrine and "broadness of vision" are as important determinants of "where technology is going" as a practical matter as are the dramatic breakthroughs achieved by research and development.

—To "provide for the common defense" in the remainder of this century, the decisionmaker of today faces a very real crisis of election, since the differentness of future conflict and the way in which he elects to accept, exploit, capitalize on, and function within the parameters of differentness—given the inhibitions he faces—is crucial to the survival of our society.

Subnational Groups, Unconventional Warfare, and Modern Security Planning

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June Dreyer
Library of Congress

The world is changing under the influence of forces no government can control. The world's population is experiencing a political awakening on a scale without precedent in its history. The global system is undergoing a significant redistribution of political and economic power.¹

The Nation-State Considered

The imminent demise of the nation-state has been predicted for many years. For a variety of reasons, the nation-state has been accused of being neither useful nor desirable in the contemporary context. Critics point out that, in this day of worldwide economic interdependence, a welter of competing nation-states is dysfunctional.

Moreover, because the nation has served to channel the aggressive instincts of its citizens outward against other nations, it has been accused of encouraging war. And, in that it must organize the lives of large groups of people according to impersonal laws and criteria, the nation-state has been called inadequate to satisfy the psychological needs of the human beings who form its component parts.

Despite these deficiencies, the nation-state remains healthy. Dysfunctional though it may be, it is the basic unit of economic allocation. And, despite its capability for encouraging war, the nation-state is also the fundamental institutional unit for the organization of world peace. In the developed world, it is still the major focus of loyalty of the majority of its citizens; in the less-developed world, a major effort is being devoted to making it the focus of loyalties.

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Nation-states remain, then, the principal actors of global power configurations. However, at the same time, increasing attention has been drawn to interactions among population groups within nation-states. Dissident groups below the level of the nation-state have become ever more visible and more sophisticated in making their causes known.

Subnational Groups

Subnational groups have a variety of reasons for existence. These reasons may be ethnic, religious, regional, linguistic, ideological, economic, or class-based, and the groups' goals may be anticolonial, secessionist, reactionary, or restorationist. In many cases, the categories overlap. What the groups have in common is their ability to mobilize public opinion, create unrest, and disrupt social order.

Only rarely possessing formal armed forces, subnational conflict groups tend to rely on less conventional means of warfare, including guerrilla tactics, mass demonstrations, and terrorism. An inclusive list of even the most recent examples of subnational conflict would consume unnecessary amounts of time and space here. Among the more salient examples are the anti-Shah movement in Iran, troubles in the Horn of Africa, Sandinista opposition in Nicaragua, communal strife in Lebanon, and unrest in Northern Ireland.

While subnational conflicts have existed as long as nations themselves, such conflicts have become of increasing interest in recent years. A large number of independent states have come into existence which do not satisfy the traditional ideal of the nation-state—a political unit whose members share a common language, history, and culture leading to allegiance to a common administrative authority. Attempts by the administrative authorities to bring disparate groups under closer control are met with resistance.

The problem of subnational conflict is confined not only to new states. There are also long-established states which are badly integrated and have suffered from endemic subnational dissent. In other states, a process of disintegration has taken place, as various segments of the population have become dissatisfied with the existing distribution of political power and/or economic goods.²

Technology and Subnational Conflict

Coincident with the emergence of many new states and the destabilization of certain older states, advances in weapons technology, primarily the development of nuclear weapons, have constrained the great powers from direct war on one another. Contemplation of the holocaust of mutual assured destruction has clearly not ended great power rivalries. Rather, it has meant that these rivalries tend to be diverted to other, smaller arenas. By manipulating dissident subnational groups in other states, major powers can play out their conflicts on a smaller scale and at lower risk to their territory and citizens.

In addition to its role in diverting great power rivalries to smaller arenas, technology has played other parts in the recent upsurge in subnational conflict. Increasingly sophisticated and increasingly geographically diffused technology has widened the range of options for subnational conflict groups.

First, societies have become ever more reliant on delicate technological systems such as power grids and generating systems. They therefore have new vulnerabilities that even a fairly small group can succeed in exploiting.

Second, technology has increased the speed of international travel. This has greatly facilitated the mobility of members of the dissident subnational group. With proper planning, a guerrilla raid or terrorist incident can be carried out against a national government and its perpetrators reach the friendlier soil of another nation a few hours later.

Third, technology has made possible improvements in communications systems. Satellite transmissions allow members of the dissident group almost instantaneous access to a global audience, either to plead the justness of their cause or frighten world opinion into accepting it.

Low-Order, Low-Threat Conflict

Terrorism and guerrilla warfare are of course disruptive to the stability and prosperity of the areas in which they are carried out, resulting in loss of life and other tragic consequences. However, these kinds of activities are low-order conflict and, by themselves, are low-threat conflict in terms of their effect on world order.

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Generally ignored in all but the countries in which they take place, these challenges are dealt with domestically by time-honored methods: the collection of information on known or suspected dissidents, and attempts at infiltration of the groups to learn their plans and disrupt their chains of command. Where a territorial concentration of dissidents exists, security barriers or checkpoints may be erected and raids against these centers carried out. Suspected targets of dissident group activity may be given extra protection. Such low-order, low-threat conflicts may remain endemic and virtually unnoticed for decades.³

Subnational Conflict and the Balance of Power

Given the atmosphere of intense rivalry among major powers and the many strategically vulnerable points on our increasingly economically interdependent globe, very few subnational conflicts are without ramifications, whether present or potential, for the international, or at least regional, balance of power.

For example, dissident ethnic groups may look to their kinfolk across the border for support against a government they believe to be unacceptably repressive. Such a situation, encouraged and manipulated by the leadership of the other nation, is a plausible scenario for war between the two nations. The Chinese have accused the Soviet Union of encouraging precisely this by inciting and subverting the People's Republic of China (PRC) Turkic Muslim minorities.

In another example, subnational conflict may occur in a country possessing a valuable mineral resource or occupying a strategically desirable position. Dissidents may seek out the help of a great power, promising or being otherwise induced to surrender control over the coveted ore or waterway in exchange for arms and advisers. This allegedly is the situation in the Horn of Africa.

A third scenario for the internationalization of subnational conflict occurs when such conflict breaks apart one state in a region of fragile, multiethnic, religious or linguistic states: the dissolution may have a demonstration effect on dissident groups in the remaining states of that area. Fears that the successful secession of Biafra might lead to the disintegration of their own

states into tribal units led many African states to support the Nigerian central government's efforts to defeat the secessionist movement.

Even where international political ramifications are minimal, low-order conflict is not synonymous with low-threat conflict. What, for example, might be the result of a small group employing chemical, biological, or nuclear blackmail against large numbers of people? The raw materials for many devastating chemical and biological weapons are available from drug stores and chemical supply houses. And a Princeton undergraduate recently designed a bomb that could be built with parts available from a local hardware store.⁴

Potential for Escalation

Clearly, subnational conflict is serious business, and it is worthwhile to examine under what circumstances these conflicts may escalate to the international level. A brief summation of factors conducive to international involvement includes:

- Dissidents' espousal of an ideological, ethnic, or religious identity dissimilar to that of the governing nation, but similar to that of a second nation or nations
- Dissidents' possession, or potential possession, of a resource useful to a second nation or nations
- Dissidents' calculated direction of violence against nation-states other than those in which they reside, in order to avoid being dismissed as the domestic problem of an established nation-state and thereby preventing that nation-state from imposing a solution on them⁵
- The active or passive support of a significant segment of public opinion in the second state in favor of intervention on behalf of the dissidents in the first state

Beyond this, escalation will continue to the extent that other powers:

- Are aware of the circumstances of the second states' intervention
- Perceive the disintegration of the troubled state, or the potential gains to the intervening state, to be inimical to their own interests

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- Are economically and militarily able to affect the situation
- Are not constrained by hostile public opinion from taking action

Where several great powers perceive their vital interests to be at stake and become involved in subnational conflict, face-to-face confrontation among those great powers becomes increasingly likely, and the original conflict loses importance proportionally. The great power confrontations originally intended to be diverted into smaller arenas may become more direct and more hostile.

Also, although the great power may originally have intended to manipulate a dissident subnational group, dissident leaders often become adept at manipulating the great power, with serious consequences for world peace. Kim Il-sung's ability to persuade Joseph Stalin that, with minimal Soviet support, he could quickly take over South Korea, is one case in point. Such instances may undermine the original intent of the great powers to contain rivalries.

Lowering the Threshold of Conflict

Given the serious consequences of the potential for escalation, what can—or should—be done about subnational conflict? Possible solutions are more easily stated than operationalized. Removing the root causes of conflict is one attractive-sounding option. The nation which provides dissidents with a higher quality living environment, better jobs, and alternate modes of self-identification and status achievement may possibly succeed in lowering the threshold of conflict.

Improving Living Standards

Few nations are in a position to eradicate the causes of conflict, being constrained by such factors as hostile majority-group opinion and/or available economic resources. Moreover, even when this solution is politically and economically feasible, it may not work. It has been discovered that, paradoxically, improving the living standards of dissident groups may encourage rather than discourage the growth of dissent. Groups who previously had to devote most of their attention to eking out a subsistence may, when given the increasing leisure brought

about by affluence, become more aware of cultural and religious differences from the majority group in the society, and be more concerned with carving out a separate enclave for themselves.

Negotiation and Compromise

Negotiation and compromise are also attractive-sounding, though elusive, solutions. The necessary common ground for arbitration is often rather small, while passions run high. For example, it has been pointed out that in the Northern Ireland conflict the status quo is unacceptable to both the Catholic and Protestant communities, since it leaves London in power. At the same time, agreement between the two communities has thus far proved impossible; nor has either side been able to impose a military or political solution on the other. This has tended to exacerbate the prevailing frustration and strife. As the strife intensifies, the polarity between the two groups is further magnified, thus lessening the prospects for compromise and accord.⁶

The Effects of Protracted Conflict

Defense of Inner Perimeters

The allocation of scarce resources to dealing with these conflicts reduces revenues available for other governmental functions. Brian Jenkins, in an astute analysis of the effects of continued conflict, notes a general trend toward nations devoting a larger part of their resources to internal security functions. Not only governments, but also certain private businesses, have given increased attention to such precautions. What have been termed "internal defense" budgets, to protect political leaders, diplomats, business people, airports, and vital systems, have grown and are consuming increasing amounts of money and labor. As Jenkins indicates, this is part of a major shift in society away from viewing security in terms of safe national borders, to viewing it in terms of defending "inner perimeters." While the defense of national borders from external attack is traditionally the responsibility of the central government, the defense of inner perimeters—to include increased public and private police forces and individual home security systems—imposes greater burdens on "local government, the private sector, and the individual citizen."⁷

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Terrorist Subculture

The problem of terrorism is apt to become more, rather than less, acute in the future. Jenkins in fact foresees the possible emergence of a semipermanent subculture of terrorism, characterized by successive generations of terrorists replacing those suppressed. These terrorists would attract a permanent, assorted group of adherents such as lawyers, mythologizers, and general hangers-on, who have a vested interest in the survival of the terrorist groups, and the perpetuation of their activities.⁸

Over time the terrorist subculture would acquire the nature of a "political underworld" and be able to carry on despite the absence of particular leaders.⁹ (In fact, the capture and execution of leaders could provide the groups with martyrs, no matter how tarnished the original causes may have become over time.) As violence becomes the operative ethos, "today's terrorist groups may become tomorrow's new Mafias, as political objectives become secondary to maintaining a cash flow."¹⁰ Indeed, the literature is replete with examples of terrorist groups who have as their *raison d'être* a tenuous ideological base, but who are engaged primarily in ordinary lawbreaking to sustain the groups in their way of life. The Huk dissidents in central Luzon, the Moslem groups of Mindanao, and the Irish Republican Army are representative of terrorist groups of this ilk.

International Links

Another perceptible trend that is fraught with disquieting potential for mischief is that of dissident groups with differing philosophies and objectives forming links with one another. Such linkage has been discerned in the cooperation of the so-called Japanese Red Army with Palestinian liberation organizations. This collaboration may be prompted more on the basis of identity of profession—that of political dissident—than on the basis of identity of ideology.¹¹ But, whatever the motivating impulse for mutual assistance, the potential cooperation of disparate terrorist groups suggests an additional issue for addressal.

US Contingency Planning

As new forms of technology become available, societies tend to become more dependent on them, and their vulnerability to interdiction of these systems by internal dissidents increases. Moreover, the central government's acquisition of certain types

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of technology may itself stimulate subnational conflict, as heretofore semi-isolated groups begin to worry that:

- **The technology will be used to increase the government's control over them.**
- **The location of some new technological system in their area may destroy the quality of life there.¹²**

Assuming, then, that political leaders will frequently be unable to remove the root causes of subnational conflict or to effect compromise with its members, and assuming there are significant international consequences to the continuation of such conflict, what problems does this pose for US security planning? It has been pointed out that several sorts of crises in which the United States is not directly involved may nonetheless generate pressure for US intervention—for example, the threatened loss of a vital strategic area or resource, an attack on American facilities abroad, or terrorist actions against American citizens.

Agenda of Issues

Leaving aside for the moment the question of under what circumstances the United States *should* become involved in subnational conflict, we shall first consider what plans must be made against the necessity for some future involvement. The following agenda is offered in full, painful awareness that its best-laid suggestions will often *gang aft a-gley*. Real-world situations will often deviate from the scenarios presented here. Unforeseen situations may arise; there will be insufficient time for careful decisionmaking, or domestic political considerations may preclude taking an otherwise desirable course of action. Recognition of its limitations notwithstanding, an agenda for dealing with the problems posed by subnational conflict would nonetheless include:

- *Improved Information Gathering.* This would involve amassing a data base on what conflicts now exist, their goals, their potential for escalation, and their implications for US security. This data base should include information not only on present subnational conflicts, but should also target areas where such conflicts may arise in the near future. What, for example, is likely to happen to Yugoslavia's position vis-a-vis the Communist and non-Communist worlds after Tito's death, as domestic ethnic and regional interests are unleashed? Who are the leaders of these various interest groups, and what are their aims?

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Information should be exchanged with allies whose interests are also at stake.

— *New Institutional Arrangements.* Many different organizations, both military and nonmilitary, currently exist to deal with various facets of subnational conflict, but none is empowered to deal with the variety of low-level conflicts outlined here. While task forces are often called into being to deal with specific incidents, their ad hoc nature precludes the development of experience and contingency planning. The handling of previous subnational conflicts in which the United States became involved should be examined, case studies developed, and plans for the future devised.

— *Development of Operations Support.* Where force is deemed necessary, as where US citizens are held hostage, a special quick-strike force should be designated and trained. Forces somewhat along these lines, such as the Navy's SEAL units, already exist, and the Secretary of Defense recently introduced a new Army-Marine Corps quick-strike team which might serve this purpose. Possessing such varied skills as marksmanship, foreign languages, medical training, and the ability to carry out amphibious, airborne, or ground raids and rescue operations, the force should be capable of rapid deployment anywhere in the world. Prior exposure to the successes and failures of other rescue missions such as those at Entebbe and Kolwezi, and of the *Mayaguez*, should also be included in the group's training.

— *Adaptation of Technology for Subnational Crises.* New technologies should be devised to safeguard the Nation's vital support systems. Already under development are devices to protect power grids and lines of communication. Power grids subject to sabotage are being provided with alternate sources of energy which will activate automatically on interdiction. And work continues on low-frequency, below-ground sound waves which can replace more easily disruptable high- or ultra-frequency sound waves for vital communications.¹³

Consideration should also be given to the development of weapons and equipment suitable to counterinsurgency, antiterrorism, and rescue missions. Participants in a recent Rand symposium on low-level conflict noted that confrontations in Hue, Saigon, and Beirut had brought the realization that the United States was particularly poorly prepared for urban warfare.

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Weapons and equipment developed in support of such operations should be easily transported and quickly assembled. There should be available aircraft with amphibious capability, long-range helicopters, standard aircraft to introduce airborne units or rangers, and advanced conventional weapons adapted for small-scale conflict.¹⁴

— *Arms Control.* Care must be taken that the new weaponry and techniques developed, as well as more conventional arms, not fall into the hands of the persons against whom they are intended to be used. Safeguards should also be devised to restrict the sale of items of potential use in chemical, biological, or nuclear warfare.

— *Legal Arrangements.* Existing laws which may be used to deal with crimes arising out of subnational conflict should be identified. Most frequently, these crimes will arise out of terrorism. Where necessary, legal codes should be expanded to deal with lacunae. For example, international law recognizes the principle of humanitarian intervention; this has been claimed as the basis for one state crossing the boundaries of another to protect the lives of its nationals. Air piracy, on the other hand, is an example of a new criminal offense which has been identified. Many countries have extended their penal codes to cover crimes committed outside the national territory, such as crimes aboard airlines. And in some areas, legislation has broadened police powers.¹⁵

Implementing the Agenda

There are, admittedly, difficulties in operationalizing all of the items on this agenda. The collection of extensive information of past, present, and potential dissidents raises inevitable questions of civil liberties. So would any thoroughgoing effort to restrict the sale of items which might be used in chemical or biological warfare. And particularly if the organized, institutionalized, and wealthy subculture of terrorism envisioned by Jenkins comes to pass, it would be able to circumvent these restrictions rather easily.

Problems abound in formulating legal codes to deal with subnational conflict. To cite only one example, it is virtually impossible to conclude a meaningful set of agreements on the extradition of persons accused of political crimes, when there is

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no consensus among nations on what are the norms of civilized behavior. When one or more states regard the cause of a subnational group as a holy quest governed by "higher laws" than those applied to the same crimes committed under ordinary circumstances, extradition may prove impossible.

The potential difficulties in deploying and using a strike force are voluminous. International acceptance of the principle of humanitarian intervention in the abstract does not mean that a given state and its neighbors or protectors will accede gracefully to the actual violation of sovereign territory which this entails. Even African leaders who did not particularly care for Idi Amin vehemently protested Israel's actions at Entebbe, and world press comment was generally unfavorable to US actions in rescuing the *Mayaguez*. Most recently, Nigerian head of state Obasanjo issued a scathing denunciation of "the unfortunate Kolwezi episode. Paratroop drops in the 20th century are not more acceptable to us than the gunboats of the last century were to our ancestors."¹⁶ Moreover, all of these incidents involving lethal weapons and a need for quick action are laden with danger. Innocent bystanders are likely to be killed, or a hospital accidentally shelled rather than the rebel bunker which was the true target, with resultant bad publicity.

In a situation where, as is often the case when the United States is tempted to take action, the subnational conflict contains overtones of anti-Americanism (that is, the holding of American citizens as hostages, or pressures directed against a government friendly to the United States), American intervention may simply "prove" to the undecided in the country whose sovereignty is violated what the dissidents have been saying: that the imperialist "ugly American" meddles in domestic affairs.¹⁷ American decisions to intervene, once made, may prove embarrassing—the recent reversal of plans to send US ships to Iran being a case in point.

Which Conflicts Warrant Intervention?

Significantly, if, as has been argued above, many subnational conflicts are important, or potentially important, to regional and international balances of power, this confronts the United States with a large number of situations in which it may be tempted to take action. The question of which conflicts

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warrant intervention is a thorny one. It is easy to agree that it is imperative to stop hostile great powers from gaining control of important sources of essential raw materials, and of essential sea lanes for transporting these materials to the United States, Western Europe, and Japan. However, there is a lack of consensus on determining precisely which hostile great power activities do in fact constitute threats, and on what to do to resist them effectively. People who want to counter a particular threat which they perceive as motivated by the USSR or China tend to insist categorically that this matter has large geopolitical ramifications—even when the connections to the basic balance of power are tenuous and highly speculative.

These and other instances in which there is pressure for intervention from factions within government and/or non-governmental interest groups are so many in number as to be beyond the economic and military means of the country, even were American public opinion generally supportive of such actions. Even were it possible to assume that the United States had the foresight to select out and take action only against those subnational conflicts which will in hindsight seem most important, there are still dilemmas.

It is often the case that a subnational conflict which is of utmost importance to regional and international questions will be inextricably bound up with legitimate domestic grievances. Again, events in Iran are an excellent case in point. It may well be that, as alleged by the People's Republic of China, antigovernment protest in Iran is fanned by the Soviet Union as part of the same global strategy of encirclement as was involved in the pro-Soviet coup in neighboring Afghanistan last year, and that it is connected with other Soviet efforts extending across the Arabian peninsula to the Red Sea and Horn of Africa. Certainly a divided, unstable Iran has important consequences for the stability of the Persian Gulf area, which is strategically important to the Western World, and important consequences for Western World petroleum supplies. Thus, whether or not the USSR is involved in events in Iran, the Soviet Union stands to benefit from a weakened Iran. Yet clearly the Iranian dissenters had valid complaints against the Shah's government. To choose to back such a government could call forth charges of supporting a corrupt status quo; yet taking the reverse course could involve even

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more serious dangers for peace and stability. To choose a middle ground of supporting reform while switching allegiance to a new leader also poses difficulties. Decisions on exactly when to switch allegiance, to whom to switch it, and what forms this backing should assume, pose obvious problems—so does a decision to do nothing at all.

Difficult as it is to weigh the various, often contradictory, indicators involved in deciding whether the threat to US security involved in a subnational conflict warrants intervention, the actual decision may depend not on rational calculations of external threat, but on essentially irrational domestic considerations. A domestic ethnic or religious group whose kinfolk are affected by a subnational conflict, or a President anxious to shore up a sagging popularity rating, may generate pressures for intervention, or force a confrontation, when it is not in the best interests of the United States to do so. Conversely, a public opinion disgusted by the failure of intervention in Vietnam may be so inimical to future US involvement that it limits American ability to take action when it is in the national interest to do so. These considerations, which are essentially beyond the ability and authority of the security planner to affect, may ultimately prove the most dangerous pitfalls in determining our attitudes toward subnational conflict. We should also be aware that irrationalities operate in other powers, and seek to understand what they are and how they might affect that power's actions in a confrontation.

Conclusions

For the foreseeable future, we must expect that protests against established states will continue, and that great powers will attempt to manipulate these conflicts to their own advantage.

Recognition that all solutions for dealing with such conflicts are less than perfect must not paralyze us into inaction, but should temper our reactions. Information gathering should proceed, but with due regard for the civil liberties of the persons involved. Pressures for intervention must be balanced against the sensitivities of the countries involved. Further, policy decisions on attitudes toward subnational conflict must be made with consideration for legitimate aspirations for social change. Only in this way can the United States hope to shape the inevitable changes in domestic and international power configurations to its benefit and attain security in a world of diversity.

Discussion On Subnational Groups

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"Isn't it curious", one panelist asked, "that we are in a national debate about the gigantic, earth-shaking issues of strategic superpower arms and at the same time we are harrassed by, and impotent to affect the behavior of, tiny bands of terrorists. . . ."

In a wide-ranging discussion, enriched by the first-hand experiences of several of the participants in coping with subnational conflict, two main themes were developed. In the earlier part of the evening, a close look at the conceptual framework on which Dr. Dreyer built her suggested approaches to the problem elicited a number of key insights into the limits of our understanding of the problem. The remainder of the discussion built on these insights to explore the frustrations of national power when faced with the limits imposed on such power as it applies to the central issues in subnational conflict.

Characteristic of just one of the frustratingly difficult aspects of the problem posed by the high-threat potential of subnational movements is the issue of data collection. In a context in which "everything depends on information," a serious dilemma confronts national authorities who cannot put off making a decision because of ambiguous data, but who are, nonetheless, immersed in a quagmire of equivocal, misleading, incomplete, and often conflicting information. While the constraints on the gathering of effective intelligence on subnational movements are reasonably well known, we tend to forget that, by design, the frustration of efforts to obtain intelligence relative to their activities is an important tactic of such groups. An additional

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factor affecting the utility of the intelligence obtained is that a great number of the members of subnational groups are only marginally aware of the issues for which they are ready to give their lives. Examples of such groups are the SWAPO (Southwest Africa People's Organization) in Namibia, the Iranian and Iraqi Kurds, the Afghan Tajiks, the Pakistani Baluchis, and even the recently slaughtered 800 Moslems in Chad. Since these kinds of groups remain poorly understood, they represent "challenges in uncertainty" to the international system.

On a somewhat higher order of conceptualization, *the distinction between subnational, and international terrorist activity suggests both the need for a comprehensive rationale in handling the problems this activity poses and the reality that each affected national power must deal with such activity in its own distinctive way.* In the anatomy of recent terrorist incidents which have been related to subnational conflict, where small groups have been able to hold large states at bay, the media, police, military, and political tolerances for potential disaster have been confused and have added to the problem of coherent coping. Important differences in the tolerance thresholds of the Dutch, the Japanese, and the Israelis, for example, underline the confusion attendant to the problem of trying to develop either a coherent national strategy or a concerted plan of action within the international community.

At another level, we are seeing in some of these efforts a thrust by one power into the affairs of another and it is important to be able to understand, identify, and—critically important in the "media" age—label such activity when it occurs. While this consideration places a premium on the kinds of intelligence and covert activity for which the US capability is rapidly eroding, the broader issue is really one of dealing with subnational interests within the mechanism of a nation-state system designed to maximize the national interest

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of its members. One panelist observed that there is really nothing new in the kinds of organized violence we have been dealing with lately. Our own lack of a historical perspective, he suggested, prompts us to neglect the lessons of history in dealing with "brigands and bandits." Others saw an essential and fundamental difference in the new terror. This difference is based on the recent birth of over 100 multiethnic states which not only saw national boundaries drawn in the midst of subnational identities, but also gave hope and encouragement to such unities in their desires to change the way such boundaries were drawn.

It is similarly important to distinguish among subnational movements with purely internal objectives, those having a "national" purpose elsewhere, and those with truly international objectives. In making such distinctions, it is useful to understand at the outset that unambiguous or clear-cut distinctions may not be possible; that supportable causes may have insupportable champions who use physically and morally reprehensible means to obtain their ends; that means and ends can become easily blurred in such a context, particularly in the forum of public opinion; and that it may be desirable to establish somewhere a set of standards for clearly undesirable behavior—thereby introducing a whole new set of problems to the issue.

When the ethical or moral dimension is considered, superimposed on the dimension of possible contributions by the subnational movement to advancing the national interest of the "judging" state, some real dilemmas are introduced.

The inability to discern truly black or truly white in the issues themselves must be expected. Biased perspectives of morality, colored by the political values of the cause, must also be expected, masking the difference between the terrorist and the saboteur, on the one hand, and the

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patriot and the freedom fighter on the other. Two panelists with extensive backgrounds in dealing with the subnational problem reached a consensus, after discussing these points, which held that given the likelihood of such value judgment problems, one fundamental requirement is a "strategic" decision of support or nonsupport, in which the intelligence factor is paramount.

Another panelist was somewhat reluctant to agree in such sweeping terms, pointing out that third-nation involvement, rather than moral perspective, made the difference between "terror" and the notion of "subnational conflict"; that there are procedural as well as substantive distinctions that are essential to any decision for support; and that the value judgment between "good" and "bad" terror is indeed central, for the United States.

In approaching this point from a more conceptual aspect, in part based on extensive experience in the Third World, another panelist reminded the group that violence is a political and social instrument "whether we in the developed world like it or not." From a practical point of view, the distinction between the patriot and the terrorist group—since there are elements of terror in all violence—may be an irrelevant value judgment; he suggested that in reaching the decision to endorse a particular movement or group, we might want to look at the expectations of the group and the ability of the group to "live with what they hope they can get."

Subnational conflict, then, is not a new phenomenon. Additional elements, driven principally by new technologies in communication, media, and weaponry, have emerged, making low-order conflict real and present "in the living room" and accentuating the fact that such low-order conflict is no longer synonymous with low-threat conflict. Violence is not new either, but violence "close to home" may be. There is, moreover, a lack of demarcation between the subnational and the

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international aspects of conflict, although the group or movement provoking such conflict is by definition not a nation-state in the accepted sense. While the justice or the validity of the cause is an attractive debating point, in terms of US national security interests, neither factor may matter. Attempts to establish "rules" for subnational movements are doomed to be self-defeating, precisely because the articulation of such rules identifies values which the "rulemakers" seek to protect, which then become enormously attractive targets to those whose entire framework of operation is wholly "outside the law in the first place."

Turning to the second theme of the evening, the discussion undertook to examine the security aspects of subnational conflict for the defense decisionmaker.

*The United States faces a particularly severe challenge in dealing with the whole spread of issues which have been lumped under the general rubric of subnational conflict. Absent an overpowering ideological identification with a particular group, the realities of the international power balance, and the domestic political climate in the United States, militate almost overwhelmingly against the use of military power in support of a subnational movement.**

The application of US military power in such a setting is further constrained by the following: access to the scene and to accurate intelligence; the effectiveness of current US forces, assuming access; the overall diffusion of power among other states whose interests are bound to conflict with our own in supporting or opposing a subnational group; and the overall diffusion of communications and publicity to the "living rooms" of the world. Furthermore, the ability of the United States to act covertly has been so severely restrained by statute that absent a clear

*During the evening of the discussion, the first decisions to assist North Yemen had been announced in the press.

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threat to a vital US national interest, such intervention or involvement is effectively impossible. Finally, as a practical matter, the question must be asked how far the United States can go in subnational conflict, remembering the most recent one in Southeast Asia, and the impossibility of "victory" in such a setting.

What interests of the United States are at peril in South Yemen? How far will we go to help Saudi Arabian interests in the Yemen? Rightly pointing out that the Yemeni situation is a conflict between two nation-states "within the system" and not a subnational conflict, important parallels were drawn between the Yemeni situation and the issues under discussion.

There are middle lanes between war and peace, one guest pointed out, and we have been working in these middle lanes for most of the time since World War II. The interests of the United States in the Yemen are clearly in these middle lanes, related to US interests in Saudi Arabia and in the Persian Gulf, related more indirectly to the domestic economy, the international strategic balance, and the US-Soviet global relationship. Consequently, some action in this case is clearly needed, but the principal problem in the United States is our lack of an institutional capability to work in this middle spectrum. Our policy is clearly one of taking the intervening steps between war and peace, and it involves a host of economic, diplomatic, psychological, political, and even military responses. Reluctance to orchestrate such responses is a serious shortcoming in the United States, and our ad hoc approach to such responses in the past is a luxury we may not be able to afford much longer.

Another panelist took up the theme to make the point that *there is a clearly felt "strategic erosion" in our ability to respond to any subnational conflict*. We must fight wars with the forces we have, he noted, and forehandedness in planning and procuring forces which are relevant in such a setting has not been a strong point in our national security planning.

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On the opposite tack, however, the point was advanced that we see US power entirely too narrowly in this regard. We tend to look at "trouble" as an aberration and forget that the kinds of trouble we are looking at in the world are the norm, rather than the aberration. Furthermore, we have in this discussion completely underestimated the other aspects of US power and we must understand the enormous strengths the United States possesses to operate in these "middle lanes." Even subnational movements must feed their people, and in our preoccupation with Soviet power we tend to forget this point. The Soviets loom much larger in Washington than they do in Kuala Lumpur.

Addressing the perception that we lack a coordinated strategy for operating in this middle lane, the point was advanced that lacking such a doctrine, we have defined the problem in terms of the doctrine we have, and that the root cause of our dissatisfaction is perhaps our inability to grasp the fact that we are, actually, doing something. The question then becomes one of determining how much we can do, lacking any real experience, with an untested capability in an essentially new challenge posed by subnational conflict around the world.

On this note, an agreement of sorts was reached that would define the parameters of our discontent, in terms of the domestic political consensus which "seems" to be violently opposed to intervention in subnational conflict—but we are not sure; in terms of our tendency to see the Soviets behind all subnational conflict, as in Iran—but we are not sure; in terms of our reluctance or inability to "intervene proportionately"—but we are not sure; and in terms of our conviction that given the geostrategic balance between the United States and the Soviet Union, subnational conflict, wherever it occurs, is a destabilizing factor in that balance—but we are not sure.

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We are sure, however, that our national planning process must somehow come to grips with these uncertainties, even if "coming to grips" involves the development of a will and a capability and a consensus to act in a context in which uncertainty, ambiguity, and the lack of a clear domestic mandate are the dominant features.

Managing the Potential for Conflict

6

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This paper began as an attempt to apply Clausewitzian and Malthusian logic to speculation about the prospects for conflict and society. Instead, the paper turned out to be a reminder and a critique of Sir Norman Angell. Clausewitz and Malthus both may be described as pessimistic in their assessment of conflict and politics (or, in turn, how they were assessed), but for fundamentally different reasons: Clausewitz because his genius in perceiving and defining war and policy was generally ignored by the actions of states, which rarely penetrated the "fog of war," and Malthus because his bleak conclusion was that society could never adequately manage the logistics of its own growth. Angell was optimistic, at the time perhaps in the extreme, believing there were structural, societal limits to conflict.

Writing 3 years before the outbreak of World War I, Sir Norman persuasively, but wrongly, argued that future conflict in Europe was extremely unlikely. His reasoning was that the sinews of economic interdependence which bind traditional and industrialized states together provided powerful restraints to conflict by virtue of two factors: the "civilizing" impact of these mutual dependencies, and the huge potential for damage posed by modern war to the fabric and structure of an increasingly vulnerable industrialized society. In this view, war in an industrialized age and among industrialized but highly vulnerable states was simply too destructive to be a plausible act of policy. The Schleiffen Plan and "Plan 17" destroyed that argument as surely as the war destroyed millions of soldiers. In the ruins of Europe, Angellian and, for a time, Clausewitzian logic would also die.

Today, however, given the impact of thermonuclear weapons with their potential for mass destruction of society, and given the broader diffusion of power with its phenomena of

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increasing societal interdependencies and perhaps vulnerabilities, both sets of factors may have called into question certain "traditional" uses of force, particularly by industrialized powers, while leaving open their likely effects on nonindustrial states and subnational groups. Thus, it may be relevant to disinter Angell's basic theses about conflict, update them, and apply them to the current and unfolding international situation with regard not only to military forms of conflict, but also to wider considerations of conflict, politics, and society.

The basic propositions or questions under examination in this paper concern three types of future conflict and their degrees of intensity: first, those forms of conflict which "authority" in general, and the United States in particular, may be able to control or to limit—"manageable" conflict; second, those forms of conflict where controls or limits may prove counterproductive or dangerous—"pernicious" conflict; and third, those forms of conflict which may be relatively impervious to and independent of manmade intervention—"neo-Malthusian" conflict.

Clearly, permutations of these forms could exist; for example, "pernicious, neo-Malthusian" conflict could be that form about which we can do little yet the conflict intensifies. By "conflict," I mean, in a general sense, the organized use of coercion or force (implicit, suggested, threatened, or actual) for political ends. By "society," I am referring to, generally, those entities termed as "industrial" states, "non-industrial" states (resource rich, poor, or indeterminate), and "subnational groups."

Because "trinities" of purpose are often adjudged or foreordained as theological in character, before penetrating that ether, a few observations are offered as controversial assertions about the nature of conflict, the prospects for its control or its expansion, and the mutual relationships of these facets of conflict with international (and, as relevant, domestic) conditions.

First, the century following the revolutions of 1848 in Europe, which were sparked by fundamental political, social, ideological, economic, technological, and emotional issues, may prove to be unique in history in that a permeating form of "global pluralism" appears to have produced an irreversible transformation of the structure of society and the nature of authority. This transformation appeared partly anchored in the

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process of "modernization" (or its denial) and, in many ways, has been one root cause of the major conflicts of the past hundred years. In sum, the distribution and control of all forms of power have radically changed, principally through extensive diffusion to many different groups of internal and external actors; this diffusion of power, in turn, has led to emerging centers of authority, as well as to competition and conflict over the extent of that authority. It may well be that we are seeing only the early stages of the impact of the general diffusion of power.

Second, based primarily on the phenomena caused by this broad diffusion of power, two diverging trends affecting the prospects for conflict are observable. On the one hand, the theoretical and actual potential for conflict, broadly defined,* has increased both in magnitude and in kind. This is particularly true for the spectrum of potential military violence, as limited nuclear options or terrorist exploitation of precision guided munitions suggest; and for expanded generic forms of all types of conflict, as suggested by recent events in Vietnam, Iran, Cambodia, the oil market and OAPEC and, even, the United States (California's "Proposition Thirteen").

On the other hand, despite this apparent increase in the propensity for conflict, the economic and political linkages of "interdependence," forged by a combination of growing dependence and vulnerability and seized on by Angell as a rational way of excommunicating war from human behavior, genuinely appear to advance a requirement for some measure of stability or conflict control in the international order of things, especially for industrial and resource-rich states. This is because internal and external state networks are becoming more complicated, constraining, and expensive for individual states or actors to ignore completely or to violate indiscriminately; and also, industrial society may be developing new dependencies and weaknesses, the disruption or exploitation of which might prove catastrophic. The impact on nonindustrial states and subnational groups is less certain.

Third, and ironically, this apparent schizophrenic behavior of international politics—resting on a foundation of increasing dependency, vulnerability or fragility, and potential prospect for

*This notion applies to a complete hierarchy of actors including industrial, nonindustrial states, and subnational groups.

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conflict—has not necessarily been paralleled either by centralization of sufficient authority or by the ability to control and to manage conflict. Regardless of intrinsic value, arms control techniques, "deterrence" theories, actual intervention, and crisis management arrangements have not seemed to keep pace with the growing potential for conflict and the increasing interdependence and potential fragility of industrial society. Thus, we may be faced with a curious restatement of Malthusian logic wherein the character of international politics, especially *potential* increases in dependency and fragility of industrial states and *potential* increases in the scope and intensity of all forms of conflict, has changed *geometrically*, while our capacity to cope with these changes and the urgency for so doing have changed perhaps only *arithmetically* at best.

This paper investigates the relationships among these observations, the three-fold typology of conflict, and the ability of the United States to cope with the possible demands posed by future conflict.

Trinity I: Assertions and Conflict Typology

If, indeed, it is fair to identify "global pluralism" as a driving mechanism of structural transformation of society; to observe that the potential spectrum for conflict has theoretically and practically expanded; to observe that a partial increase in the fragility and interdependent-vulnerability relationships of industrial society has occurred; and, to observe that our ability to limit conflict has not kept pace with its growing potential, then it is equally fair to inquire how these trends might affect the types of conflict noted above.

To the extent that any conflict—whether political, military, economic or social in nature—is theoretically "manageable," fundamental characteristics of this typology must include strains of limit, compromise and solution in which military force is *not* the ultimate authority (i.e., the Vietnam War might have been "manageable" if the United States had decided to employ, say, 40-80 megatons of nuclear input). "Winning" is not considered a unilateral form of manageability. Manageable forms of military conflict include the recent Argentinian-Chilean dispute over the Beagle Channel and the Yemen border conflict which, while unlikely to disappear, remain controllable for reasons internal as

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well as external to both states. Manageable forms of economic conflict include disputes over balance of trade or payments issues in which it is in the interests of the concerned parties to resolve the conflicts. Manageable forms of political conflict have included, so far, US-Soviet relationships. In other words, in these cases, the division of authority is such to discourage hegemony while permitting and encouraging reconciliation and bargaining.

One major effect of the increased diffusion of power on manageable forms of conflict has been to increase the number of potentially participating constituencies which may lead to the further division of authority. Within this broad trend, certain monopolies or oligopolies have developed such as in resource cartels, notably the oil cartel. However, an expanding participatory base suggests that as potential conflicts involve more interested parties, the effect on their "manageability" is perhaps more uncertain. In the past, conflict between A and B, if A and B were known quantities, tended to be predictable in terms of likely outcome. By introducing X, Y, and Z, which may be unknown quantities, and reducing the authority of A and B, uncertainty and unpredictability are bound to increase, although conflict may still be manageable.

The increases in the potential scope and types of conflict, and what may be the increasing fragility of industrial states, have produced effects on manageable forms of conflict likened to crosscurrents and riptides. Clearly, as industrial society becomes more vulnerable or dependent upon certain resources or conditions, certain "civilizing" tendencies reinforce the need for minimizing conflict. Alternatively, the dependencies themselves are potential targets for attempted exploitation by one constituency or another. How these increasingly complex and potentially violent crosscurrents will affect the prospects for manageable forms of conflict is by no means clear nor, necessarily, predictable.

The pace of the capacity of "authority" to cope with these *potential* changes in international behavior has not kept up. In terms of manageable conflict this may not invariably be problematic because, by definition, this form of conflict contains a self-adjusting mechanism. However, in a theoretical sense, areas of conflict which were previously manageable may be evolving into conditions more Malthusian in nature. Western dependence on oil is an obvious example.

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"Pernicious" conflict is that form in which controls or limits prove counterproductive and even dangerous for one or more of the participants. United States actions in Vietnam, marked by the *modus operandi* of "graduated response" did not, in fact, lead to a satisfactory conclusion of the war, at least from an American view. "Beggaring thy neighbor" currency devaluations in the late 1920's contributed to the collapse of the industrial economic system; and, regardless of intent, US policies and actions toward the Shah have not led to successful resolution, necessarily, of political conflict in Iran. What is truly pernicious about this type of conflict is that the perception of strengthening authority generates false optimism concerning a successful outcome, while the reality is that authority will not meet the task. In the worst case, the result could be systematic breakdown.

Increasing diffusion of power, increasing societal dependencies, and sluggish capacities for coping with these changing factors imply several likely effects for pernicious conflict.

First, as the potential scope and intensity for conflict increase, along with greater numbers of likely participants, the propensity probably grows for more conflicts to become exacerbated and less controllable. This is because limits on power and authority tend to become accentuated as "global pluralism" continues. Thus, we may be facing future conflict where, despite the requirement and urgency to act, our ability and, more importantly, the limits to that ability are likely to compound the conflict because of insufficient leverage, decreased influence, or declining power of "authority" to impose a desired outcome.

Second, these factors may be emphasizing the asymmetry between "positive" and "negative" actions. Thus, as pluralism increases, as dependencies and potential vulnerabilities grow, the comparative advantage of denying certain actions may be accelerating more quickly than that of initiating positive ones. For example, if Clausewitz was correct in asserting that the defense is the stronger form of war, he is certainly correct in economics if one weighs what a government can do toward fighting inflation, for example, and what domestic groups can do toward countering those actions. This does not mean "positive" action is doomed to failure. But, in pernicious conflict, positive action is going to cost exceedingly more and more and more if it is to be effective.

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Third, as "global pluralism" persists, as authority is divided, as states become mutually enmeshed, the prospect probably grows for potential conflict to assume more pernicious and less manageable forms. Despite "civilizing" effects, growing conditions of interdependence and vulnerability are liable to make future conflicts potentially more pernicious because of increasing complexity, declining authority, and limits to the effectiveness of control.

Suppose, for example, that both the United States and the Soviet Union continue to develop increasingly selective, finite, and controllable nuclear forces. Since both sides would have the capabilities for highly controlled use, a doomsday situation conceivably could arise when nuclear weapons would be used, despite the presumption of selectivity and control as a means of avoiding war. Thus, because of the actions of both sides to emphasize control and selectivity, the strategic nuclear competition would become ironically and tragically pernicious.

Suppose, for a second example, that in response to the Egypt-Israeli Peace Treaty, OAPEC set the price of oil at the current spot rate. The dependence of Western industrial society on oil could trigger an immediate economic recession due to energy and capital scarcity. This in turn could impact on the international monetary system, redound on OAPEC and its external holdings and further redound on oil production and price. The "crash of 1929" could be trivial by comparison. These cases are bizarre in the extreme and underscore potential limits to pernicious forms of conflict.

"Neo-Malthusian" conflict is conflict which has a nature of its own and is inevitable in the sense that controls or limits have little effect on either the symptoms or the causes of conflict. The events leading to World War I are suggestively neo-Malthusian. If we are unable to control the energy demands of industrial society, dependence upon oil could assume Malthusian proportions. A key characteristic of this form of conflict is the inability of authority to become centralized or powerful enough or gain enough consensus to reverse trends of international behavior, environment, nature, or fate.

If crosscurrent and riptide effects were results of the interaction among international trends and manageable and pernicious conflict, the range of possible changes to "neo-Malthusian" conflict produced by these factors can approach in

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intensity either tidal waves or becalmed seas. As society becomes more industrialized, more interdependent, more dependent or vulnerable and, perhaps, more fragile, one can posit conflict scenarios over which we could have little or no control but which could lead to catastrophe or to happy resolution. What is rather frightening is that in these forms of conflict, regardless of outcome, we may not be able to control our fate.

No one suggests that cataclysmic scenarios are remotely possible nor that neo-Malthusian conflict could not be benign. However, the question is the extent to which industrialization, the broad diffusion of power, the increasing fragility of Western society, and the capability to control conflict produce vulnerabilities which are increasingly neo-Malthusian in character. Further, to what extent do these factors allow solutions to, or control of, future conflict to be useful and acceptable alternatives for authority?

The happy thoughts and trends drawn from Trinity I in speculating about the prospects for conflict are as follows:

- At a time when power appears to be diffusing, "authority" *in general* appears to be constricting. This may be signaling the end of a parliamentary model of international politics and its replacement by a pluralistic or federal analogy.
- As Western society increasingly modernizes and industrializes, its rate of generating *newer* dependencies and vulnerabilities is at least as great or greater than the dependencies and vulnerabilities which industrialization is meant to reduce or to eliminate.
- As the potential scope and intensity of all forms of conflict increase, the potential fragility of society appears to be increasingly vulnerable to potential exploitation at least perceptually and, possibly, physically.
- The impact of these trends on manageable, pernicious and neo-Malthusian forms of conflict is to increase the uncertainties and unpredictabilities of effect. Clearly, the "destructive quotient" of pernicious conflict is increasingly frightening as vulnerability and potential for

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destruction grow. However, equally distressing may be forms of neo-Malthusian conflict which, for good or ill, we become increasingly powerless to affect.

What do these trends suggest for the United States and what can we or should we do about them?

**Trinity II: The United States and
Conflict Typology**

If there is a primary trend affecting the United States today, it is perhaps expressed in the Gulliver-like form of a helpless giant overcome by swarms of insignificant adversaries. Behind this image, however, is a fundamental reality; namely, that for most of its existence, the United States was able to compensate for its vulnerabilities by exploiting a combination of favorable geography and virtually unlimited resources. We were rather like a profligate son able to make up enormous debts by drawing on family capital. Regrettably, Papa may be turning against us. This means that the United States needs to find new approaches or to realize that the days of unlimited overdrafts (if they ever existed) are far behind.

First, a few general observations about the United States and the forms of conflict are offered as background. Then, more specific points are made concerning the United States and future conflict and what *can* be done.

If "pluralism" persists globally, it is thriving in the United States. With several exceptions, domestic and foreign policies are becoming more closely intertwined and perhaps less subject to bipartisanship. Whether or not the Versailles episode is repeated over SALT, there are certainly more interested and participatory constituencies in this go-round, indicating the increasing potential complexity and difficulty in reaching a decision on ratification of a critically important treaty.

With regard to dependencies and potential vulnerabilities of US society toward future conflict, certain observations are suggestive of trends. In a military sense, our relationships with the primary adversary, the USSR, are likely to remain within the bounds of "equivalence." Despite genuine concerns over Soviet military capabilities and spending, there is every reason to believe that, in this area, the United States will be able to keep pace.

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Where the United States will find itself increasingly dependent and perhaps vulnerable is in potential military conflict not directly involving the Soviet Union. Because our "vital" interests are becoming increasingly resource-dependent and because those resources are generally located in areas inaccessible due to geography or politics, the United States must be sensitive to ways of securing future access, especially in crisis. Thus, infrastructure, logistics, transit rights, and basing must be subject to more careful preplanning in order to accommodate peacetime political activities which pressure for and against such initiatives and wartime demands when force will be applied to resist US objectives.

In an economic sense, our dependencies and vulnerabilities grow as living standards appear to increase and as Americans appear reluctant to accept a conscious reduction in those standards. Whether this suggests a real or apparent increase in the fragility of society may be debated. However, examples such as oil, inflation, the structure of the monetary system, increasing computerization, and rising health care costs suggest potential Achilles heels. Thus, the faster we go toward post-industrialization, the more sensitive we may be to potential economic exploitation.

With regard to political dependencies and vulnerabilities, there are only hints that the fundamental paradoxes in the Constitution and federal system of government may be less subject to reconciliation in the future. This has always been the case to some degree; the degree may just be getting larger, as calls for balanced budgets mandated by law or constitutional convention perhaps suggest. Thus, potential conflict over the basic structure and nature of government cannot be dismissed nor diminished in potential impact.

Similarly, the propensity for international forms of political conflict does not seem to be shrinking. The diffusion of power, combined with the temporary tendency of the industrial powers to regard the use of force as a less relevant, less effective, and less acceptable instrument of policy, in many cases has led to more actors becoming increasingly active in advancing their interests through conflictual or competitive rather than cooperative means.

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Against this background, the US potential capacity for controlling or limiting these conflicts is not growing as quickly as is the potential increase in possible scope and intensity of conflict. Arms control agreements, despite their utility, appear at best partial (and some would say, cynical) palliatives. Arms transfers to nonindustrial states appear to be gathering their share of skepticism. United States ambiguity in demonstrative uses of force, such as the sending of F-15 and AWACS aircraft and the U.S.S. *Constellation* to the Persian Gulf, does not dispel doubts about the remedial effects of these actions.

United States controls over potential economic conflict are also difficult to envisage, with a potential oil conflict being the most obvious case in point. And, politically, one does not see new procedures emerging, although "old ones" may have been effective between Egypt and Israel.

Trinity III: What is to be Done?

If one takes the approach of Voltaire's Pangloss, neo-Malthusian forms of conflict are to be welcome, since, inevitably, they will turn out for the best. Without sufficient guarantee of that occurrence, however, the United States is perhaps prudent to hedge its bets.

Given the traditional three "wishes" granted by "fairie god-parents" and bottled genies, on purely philosophical grounds, I might order my wishes for future administrations, as follows:

- **First, a better understanding of the complex and subtle as well as the obvious and initial effects of action would be helpful.** To the degree Hegel and Lenin were correct, contradictions exist. The issue often boils down to being unable to reconcile the irreconcilable and living with paradoxes appreciating second-, third-, and fourth-order effects.
- **Second, a better balance between "systems experts" and area students might be productive.** It used to be that analysis and prose were often synonymous. Now coincidence is usually held culpable. Unfortunately, Voltaire may have been right in regarding statistics as one form of "damn lies."

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- **Third, the trend toward increasing reliance on "technical means" for intelligence assessment at the expense of what was once considered "strategic intelligence" or thinking must be reversed.** Despite the extraordinary capabilities of these technical systems for producing data, they are still too dependent on physical inputs (and, as such, on access or weather) and, in an increasingly complex world, do not make sufficient use of the human element. If the propensity for all forms of conflict does increase, human knowledge about human activities may either complement or reinforce other means of obtaining information.

In translating these concerns into actual policy considerations for dealing with the future prospects for conflict, let us focus only on the military forms of conflict and leave the others for subsequent discussion.

On the strategic nuclear level, barring terrorist attack, the prospects for future conflict will be dependent entirely upon the US-Soviet relationships and the impact of a tiny but growing, especially sea-based, Chinese nuclear force. Except for accident or miscalculation, this balance appears stable because the political confrontation between the two sides likely to provoke nuclear war is sufficiently high to remain unlikely, and because both sides tend to view their nuclear forces in different perspectives. Thus, as long as those perspectives do not fully overlap, competition need not become pernicious. Thus, for the time being, on the strategic nuclear level, the prospects for conflict are manageable or manageable-neo-Malthusian in character.

What could lead to pernicious possibilities is the total failure of SALT, resulting in the collapse of the political underpinnings of the United States-Soviet relationships or the compulsive adoption of new technologies designed to gain a full measure of "superiority"—whatever that means.

On the conventional level of future conflict, one needs to view situations in which both the United States and the Soviet Union are involved and situations in which only one power is involved. Although the United States seeks to deter a situation of conventional war with the Soviet Union, in my view, such a confrontation would face the real risk of nuclear escalation and hence would be treated as being in the nuclear category. Indeed, given those linkages and the growing costs of maintaining

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conventional forces, it would not be surprising to see the United States turning increasingly toward theater nuclear force improvements in the 1980's, making *Nuclear Weapons and Foreign Policy* (warts and all) required reading again for the poor scholars and statesmen of the next decade.

But what appears to be the most interesting and most unpredictable area is the prospect for military conflict not directly involving both superpowers. Perhaps Beaufre's argument of the 1960's stressing this type of conflict will prove particularly prescient. Regardless, such conflict will prove most difficult for the United States for several reasons:

- Conflict in these areas is likely to be geographically remote; hence, projection of power and maintenance of logistics will be difficult.
- Potential adversaries possess increasingly lethal weaponry, thus increasing the costs of intervention.
- United States public opinion and legislation (War Powers Act, Nelson Amendment) may limit the actual use of force. (This could change.)
- Counterleverage through economic and political instruments could occur, hence questioning the relevance of using force in the first place.
- Given the increasing costs of defense, the United States may be forced into building for one war only, namely, defense of Europe and Japan against Soviet/Warsaw Pact coercion and aggression.

These constraints set certain requirements which can compensate, but only in part and only to a degree, for additional programs and military capabilities:

- First, advance US planning must incorporate more closely all US capabilities. For example, military contingency planning usually falls under one Unified Commander who may be oblivious of other contingencies not under his responsibility which draw on the same capabilities.
- Second, development of moderate infrastructure, logistics, and preplanned access is important to permitting timely response to future military conflicts.

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- Third, development of regional specializations which complement current data collection, including a return to more covert forms of intelligence gathering, is crucial.
- Last, and overarching, is the need to continue to press toward strategic arms limitations agreements which over the long term substantially reduce the risk of conflict, principally by inducing political actions that improve the US-Soviet relationships. This is clearly for the long term and, despite growing cynicism and the press of technological innovation, is the one area of most critical importance if the risk of conflict is to be kept from reaching a pernicious form.

Discussion On Managing the Potential for Conflict

6

At the outset, a world was described to set the stage for a discussion of Commander Ullman's paper. It was a world of "creeping global pluralism," with the possibility of radical change of structure and fragmentation of whatever "authority" once existed. It was a world in which the conflict potential was increasing; a world of some balance, but not enough; of some interdependence, but not enough; and of some—increasing—adventurism, lowering the threshold of stability. It was a world in which the ability to limit the threat and scope of conflict seemed to be deteriorating. It was a fragile society.

As power diffused in this bleakly described world, authority tended to constrict. As Western society achieved post-industrialization, new vulnerabilities emerged, vulnerabilities stemming from the very exploitabilities which had made post-industrialization happen. It was a world in which its citizens felt, increasingly, unable to control their own futures.

It was also a world which few participants were wholly ready to accept or recognize, and which most felt compelled to challenge.

What can be said about the world power economy?

Something *is* happening to the world power economy, incident to the growth of technology and the resource distribution configuration in today's world. Relative power may be shifting between old and new power centers, but it is overly simplistic to describe this pattern only in terms of the *diffusion of power*. Is the power that *is* diffusing relevant? Most felt that it probably was not. Despite formidable technology-bred power in

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the Western world and Japan, such power is not terribly useable in day-to-day events, although there is no question that the formidable resource-bred power of OPEC will very shortly become so. There seems to be an "entropy" of power, as if the world were a closed thermodynamic system, in which less and less power can be assembled and used, and in which the power that is available is diffusing into irrelevant pockets. This much may be true. But from an operative viewpoint, both the new constraints now felt by the United States and the new opportunities now felt by both the Soviets and the newer power centers exemplify not a diffusion of power *that once was* but a *whole new growth of power*, which flies in the face of the "entropy" analogy. Whatever diffusion we may seem to see is neither irreversible nor inevitable, given only substantial will on our part to reverse the growing imbalances.

Something *may have happened* to this world power economy since the height of the polarization of the Cold War, but looking back 100 rather than 30 years presents an entirely different perspective. Substantial, meaningful, effective, *operative* power was more diffuse and concentrated in a greater number of power centers in the world of the 1870's than it is today. The end of a century-long power balance—a balance established by the Congress of Vienna and shattered in World War I—was caused by a *coalescence* of power, not its *diffusion*; if the hypothesis of power diffusion is to suggest any implication, perhaps it points toward the return of a more stable system, as whatever diffusion away from bipolarization leads back toward the historic model of the last century.

Drawing from an earlier discussion,* the *forms* of power in today's world have changed in this generation and are changing; the *arenas* in

* See Chapter 2.

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which these new forms of power interact and encounter the more traditional forms of power are expanding; and the *configuration* of the world power patterns is changing. It is not necessarily a less stable world than "worlds past," it is not necessarily a more fragile world. It may be a less pleasant world to live in, from the American perspective, but the problems are not necessarily new. Neither are they simple.

What can be said about the new kinds of power?

In the recent events in Iran, economic and cultural factors were at the heart of a "power eruption" which, in the words of one guest, "should say something about this question." If we look at the power equations in the recent Iranian situation, it was neither the Iranian control of oil nor the Western "spot" ability to cope with the shutoff that entered into the equation. It was the negative quantity of *abrogation* which entered finally into the calculus and affected its outcome—abrogation on the part of the United States, abrogation of the kinds of power which could have made a difference.

In the previous Iranian crisis in 1952 US power was evident, and in the second crisis it was not. No military power was needed in the first, but "did the second crisis turn out so badly *because* no military power was available to be brought to bear?" While few were willing to go that far, one guest noted that the leverage which the United States was able to apply in 1952 was really based on the fact that the world could do without Mossadegh's oil in 1952 but in 1979 the prospect was terrifying. The problem in 1979, then, was "not an inability to inflict violence but an inability to select an appropriate target for the power which we still had. There was no target for the Shah's considerable power, no agent to deal with on our own terms. The ability of the Shah or the 82d Airborne to shoot people on the streets was irrelevant."

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The kinds of power that "count in the world" are the kinds that give the ability to influence others. Such power has many forms and many degrees, extending from the power of good example which prompts others to emulate us, through the power of mutual exchange which exacts a *quid* for our *quo*, through the power of mutual assured destruction. But one cannot use and redeem and enjoy what one has *destroyed* and we seem to have lost all, or most, of the international means of *exchange*, for one reason or another. We are left with the prospect of exercising power more in the sense of trying to demonstrate that we once had more of it and that our self-confidence has not been destroyed in its loss; that there are still elements of power and status which we possess and which can be emulated; and that there is still "something special about Americanism."

The inability to manage conflict and *dictate international stability* may not imply a loss or an absence of power, where it matters, at all. Conflict and instability may really simply be inevitable, despite the almost visceral American abhorrence of either. "Show me a person who is interested only in stability and I will show you a person who simply has what he wants." We have so allowed the Soviet Union to capture the concept of change from us that we have forgotten that the Declaration of Independence has caused more unrest and instability in the world than has the Communist Manifesto! The kind of power we really should be talking about, if we care to view it as a power, is the power to adjust to change, to accept the fact that conflict is not an aberration, and that violence and instability have a place in our framework of looking at things, if not in our value system. In our current "peace at any price" strategy, we are squandering what power we have left on the wrong things.

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"Our goal in the world is to be *just*." We use our power not only to coerce, where absolutely necessary, but more importantly to achieve just purposes. When dealing with "hostile people and ideas" we must have the capability to *coerce*, but a very large part of our aims is to *cooperate*. In Europe, after World War II, we achieved our aims in the politico/economic recovery by using the cooperative rationale; the Soviets, in their sector, by using the coercive rationale. Today, our power to coerce, our psychological and societal disposition to apply the coercive rationale, and our opportunities for coercive action are severely limited. "We do not, in that sense, have the power that we used to have." But we do have the power to cooperate and work jointly with people who share our objectives. There remains an enormous value to international action in the world, and we should try to capitalize on the opportunities which still exist in the world to use it.

US power may not be declining in the absolute sense, although it certainly appears that it is. Our ability to manage events is decidedly less than at any time in the last thirty years and we, as a society, are now far more vulnerable "at the margin for error." Can we manage *uncertainty*, now that we can no longer manage *events*? Are our procedures and our strategies and our processes at fault, given the size of our formidable defense establishment, or is it simply a matter of our predilection to concentrate on uncertainty and not on history and power in being? We seem to have a variety of very expensive tools and instruments without the slightest capability to orchestrate their use. "We do nothing, in the national security policy arena, well."

This final discussion of the 1978-1979 series was about Power. It was about what the United States can do *within* and *about* the global power balance. It was about the state of power diffusion in the modern world. It was about the decline of power in the West, the ascendancy of power in

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the Soviet world, and the emergence of new power centers decoupled from either camp. Only indirectly was this final discussion about *The Future of Conflict*; perhaps, indirectly, this tells us something, both about power and its uses in the international community and the conflict avoidance capability such power brings.

By way of summation, several threads established the fabric of consensus which wrapped itself around this final discussion of the series.

The times are changing.

The relative power of the United States is declining, more in its operative aspects than in its absolute values.

The potential for conflict is increasing, not inexorably but because of social, structural, procedural, and perceptive factors which are beginning to color international judgments.

The increase in the potential for conflict is not irreversible.

Conflict involving the United States is not inevitable.

The continued erosion of the perception of US power is not inevitable. But time is not on our side.

Endnotes

Chapter 2 Endnotes

1. One may *project* a 5-year-old's average annual 8-inch growth to a height of 6'8" at age ten. He can *forecast* a slowdown in growth to an expected height of 4'8" by the same age. The boy's mother can *predict* that by the time the little fellow is ten, he will be in his grave because he always plays in the street.
2. And thereby assume, for example, *current* "great power" status for nations like Brazil because of their future potential.
3. Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Praeger, 1965), p. 39. His grouping of the rungs into such stages as "subcrisis maneuvers," "bizarre crises," and "central wars" is useful in conceptually marking thresholds at which the intensity of conflict essentially changes.
4. A reader, casting about for an example of the hazards of "oversimplification" noted earlier, is bound to note the difficulties which are central to any attempt to seriously describe the world over a 20-year period in one-word terms. No attempts at serious or detailed description is implied.

Chapter 3 Endnotes

1. There are many other points of view evident in the public debate, including those who support an isolationist US foreign policy, those who see no Soviet threat to the West, and those who support a US nuclear policy of minimum deterrence. But, in my judgment, the impact on the policy process of those who hold such views is negligible.
2. Besides doing nothing the options include the following: phase out ICBM's and shift reliance to sea-based systems and bombers; negotiate arms control agreements specifying ICBM flight test limitations and stringent MIRV deployment limits; adopt a declaratory policy of launch under attack; deploy Minuteman ICBM's or their successors in hybrid tunnel basing or in other underground systems; deploy offshore submersibles carrying ICBM's; deploy air-launched ICBM's in wide-body jets; deploy ballistic missile defenses of the Minuteman silos; deploy a

multiple aim point (MAP) system, with 5 to 10 to 20 holes per missile; respond in kind to the Soviet fixed-based heavy ICBM threat with the deployment of a fixed-based MX system; deploy a fleet of ALCM carriers to augment the triad; deploy large numbers of long-range ground-launched and sea-launched cruise missiles to augment the triad; and numerous combinations of the options cited above. Some of these options are not permitted under SALT I or may not be permitted under SALT II. Some rely on arms control solutions, others on defensive measures, and still others on offensive measures. Currently the MAP and air-launched systems seem to be the leading contenders. Note that many of the options consist of two decisions: a new missile to replace Minuteman III and a basing mode for the new missile.

3. A very well argued case in support of SALT II, which takes account of the need to resolve the ICBM vulnerability issue and many other military problems, may be found in Jan M. Lodol, "SALT II and American Security," *Foreign Affairs*, Winter 1978/79, pp. 245-268. Some possible consequences of the termination of the SALT process are reviewed in Michael Nacht, "In the Absence of SALT," *International Security*, Winter 1979, forthcoming.

4. This briefest of summaries of selected regional confrontations is intended to be suggestive, not exhaustive. Attention could just as well have been directed toward southern Africa, the Horn of Africa, Cuba, or the Korean peninsula, for example.

5. The recognition of the nuclear energy-nuclear weapons connection is, of course, not new. The Baruch Plan of the 1940's, the Atoms for Peace Program of the 1950's and the Nuclear Non-Proliferation Treaty (NPT) of the 1960's all address this connection.

6. These strategies are reviewed at length in Michael Nacht, "Controlling Nuclear Proliferation," in *The Eagle Entangled: Contemporary Issues in American Foreign Policy*, Kenneth Oye, Robert Lieber and Donald Rothchild (eds.), (New York: Longmans, Inc.), forthcoming.

7. Note that the most efficient route to nuclear weapons acquisition is to purchase or steal weapons or to manufacture them directly. Many nations, however, seek to develop a domestic nuclear energy program and to keep open a nuclear weapons

option. For these nations access to enrichment technology (to obtain highly enriched uranium) and reprocessing technology (to obtain plutonium from reactor spent fuel rods) will satisfy both objectives.

Chapter 4 Endnotes

1. See generally R. E. Dupuy and T. N. Dupuy, *The Encyclopedia of Military History* (New York: Harper & Row, 1977) for a comprehensive reference to world military history from antiquity to the early 1970's. It should be noted that the first use of gunpowder weapons in Europe was by the English at Crecy, as well.
2. F. Engels, *Herr Eugen Duhring's Revolution in Science (Anti-Duhring)* (New York: International Publishers, 1939). Written in 1878.
3. For an excellent discussion of such failures as they relate to technological projections, see Arthur C. Clarke, *Profiles of the Future: An Inquiry into the Limits of the Possible* (New York: Harper & Row, 1973), revised edition.
4. US, Congress, House, National Resources Committee, *Technological Trends and National Policy, Report of the Subcommittee on Technology to the National Resources Committee*, House Documents, Vol. 18, No. 360, 75th Cong., 1st sess., 1937 (Washington, DC: Government Printing Office, 1937).
5. See D. G. Brennan, "Weaponry," in *Toward the Year 2018*, edited by the Foreign Policy Association (New York: Cowles Educational Corporation, 1968).
6. Harold Brown, US Secretary of Defense, *Department of Defense Annual Report Fiscal Year 1979*, February 2, 1978, p. 53.
7. See generally Bernard and Fawn M. Brodie, *From Crossbow to H-Bomb* (Bloomington, Ind.: Indiana University Press, 1973).
8. See Colonel Richard G. Head, "Technology and the Military Balance," *Foreign Affairs* 56 (April 1978): 544.
9. For an early discussion of the concept of technological war, see Stefan T. Possony and J. E. Pournelle, *The Strategy of Technology* (Cambridge, Mass.: Dunellen, 1970).
10. Colonel Donald J. Stukel, *Technology and Arms Control*, National Security Affairs Monograph 78-5 (Washington, DC: Na-

tional Defense University, September 1978); also see Harvey Brooks, "The Military Innovation System and the Qualitative Arms Race," *Daedalus* 104 (Summer 1975).

11. The phenomenon of Eurocommunism has demonstrated that the monolithic future of Marxist ideology is quite bleak in Europe; the Egyptian break with the Soviets in 1972 (as well as strident Saudi anti-Communism) suggests that Soviet prospects in the Middle East are not promising. The abortive deals with the United States and Japan at the peak of detente euphoria during the early 1970's indicate that Soviet trade will not be terribly exciting in the mid-term.

12. Barry J. Smernoff, "Beyond the 1980's: Space Defense, Laser Weapons, and the Strategic Tetrad," HI-2871/2-P, Hudson Institute, July 1978.

13. See Geoffrey Kemp et al., ed., *The Other Arms Race: New Technologies and Non-Nuclear Conflict* (Lexington, Mass.: D. C. Heath and Company, 1975).

14. US, Congress, Senate, Committee on Commerce, Science and Transportation, *The DOD Activities in Space and Aeronautics, FY 1979*, Statement of William J. Perry before the Subcommittee on Science, Technology and Space, 95th Cong., 2d sess., 8 March 1978, pp. 111-139.

15. This possibility is related to the "stabilizing" impact of space photography by national technical means to verify compliance with SALT.

16. In FY 1980, the Japanese defense budget will be about \$11 billion with up to \$500 million designated for military R&D (personal communication with Albert LeBlanc, OUSDR&E, 11 December 1978).

17. US, Defense Science Board, *Report of the Task Force on Command and Control Systems Management* (Washington, DC: Office of the Undersecretary of Defense for Research and Engineering, July 1978), p. 7.

18. Ruth M. Davis, "The Keystone Role of Electron Devices in Anticipated Battlegrounds of the Future," Keynote Address to the International Electron Devices Meeting, 5 December 1978.

19. In this regard, it is interesting to note the first major item on the PRC's list for importing American technology: a communication satellite.

20. Walter Munk and Carl Wunsch, "Ocean Acoustic Tomography," June 1978, preprint.
21. Within the context of the Sino-Japanese Treaty of Peace and Friendship signed in August 1978, the PRC might become quite interested in strategic technologies that Japan begins to develop during the period 1980-2000 if they could provide military and even political leverage vis-a-vis the Soviet Union.
22. For an excellent essay on general considerations about American intentions, see Stanley Hoffman, "The Hell of Good Intentions," *Foreign Policy* 29 (Winter 1977-1978).
23. Benson D. Adams, *Ballistic Missile Defense* (New York: American Elsevier, 1971), p. 53.
24. We should remember that the best is often the enemy of the good. Insistence on perfection and high levels of cost-effectiveness could hold us a technological hostage to the Soviet propensity for early prototyping.
25. As my colleague Donald Brennan quipped, then nuclear-armed moles would become the order of the day for the offense-minded adversary!
26. US, Arms Control and Disarmament Agency, *Arms Control and Disarmament Agreements*, Washington, DC, 1977, p. 133.
27. The technology of SALT verification, of course, is one of the most interesting and sensitive dimensions of the surrogate technological war between the nuclear superpowers.
28. Ted Greenwood, "Reconnaissance and Arms Control," *Scientific American*, February 1973.
29. George C. Wilson, "Carter Concerned on Outer-Space War," *The Washington Post*, 10 March 1977.
30. US, Congress, Senate, Committee on Commerce, Science and Transportation, *DOD Activities in Space and Aeronautics, FY 1978*, Statement by Robert N. Parker, Acting Director of Defense Research and Engineering, before the Subcommittee on Science and Space, 95th Cong., 1st sess., 9 March 1977, p. II-2.
31. "Soviet Union Outpaces US in Preparing for Possible War in Space, Brown Says," *The Wall Street Journal*, 5 October 1977; and Bernard Weinraub, "Brown Says Soviet Can Fell Satellites," *The New York Times*, 5 October 1977.
32. Brown, *DOD Annual Report, FY 79*, p. 125.

33. William F. Scott, "Troops of National Air Defense," *Air Force Magazine*, March 1978.
34. Richard Burt, "New Killer Satellites Make 'Sky-War' Possible," *The New York Times*, 11 June 1978.
35. Bruce Murray and Marton E. Davies, "Detente in Space," *Science*, 11 June 1976.
36. William W. Brown, "The Balance of Power in Outer Space," *Parameters, Journal of the US Army War College*, Fall 1977, p. 10.
37. Perry, *DOD Activities in Space, FY 79*, pp. III-36, 37.
38. For a comprehensive description of US space surveillance see "The Arms Race in Space," Chapter 5 of *World Armaments and Disarmament, SIPRI Yearbook 1978* (Stockholm International Peace Research Institute, 1978).
39. Maxwell W. Hunter, "Strategic Dynamics and Space-Laser Weaponry," 31 October 1977. (Unpublished paper)
40. US, Congress, Senate, Armed Services Committee, *DARPA FY 1979 R&D Program*, Statement by Robert R. Fossum before the Subcommittee for Research and Development, 95th Cong., 2d sess., 9 March 1978, pp. 1-3.
41. US, Congress, Senate, Armed Services Committee, *Fiscal Year 1978 Authorization for Military Procurement, Research, and Development . . . Hearings, Part 9, 95th Cong., 1st sess., March 1977* (Washington, DC: Government Printing Office, 1977), pp. 6177-83. A less authoritative but more provocative set of views on this subject is provided by Hunter, "Strategic Dynamics."
42. Richard L. Garwin, "Effective Military Technology for the 1980's," *International Security* 1 (Fall 1976): 73.
43. According to the Joint Chiefs of Staff, the shuttle's significantly improved booster capability will allow satellites to be made heavier, harder, and more maneuverable. It will also allow the United States to place large systems "such as a space laser" into orbit. See *United States Military Posture for FY 1979*, Statement by General George S. Brown, Chairman of the Joint Chiefs of Staff, to the Congress, 20 January 1978, p. 107. Charles Sheldon concludes that if the US space shuttle is unmatched by a corresponding Soviet capability, the US space program may be-

come much stronger and more active than the Soviet one (see his "Soviet Space Activities in 1977," *Air Force Magazine*, March 1978).

44. Kenneth Gatland, "A Soviet Space Shuttle," *New Scientist*, 8 June 1978, and *Missiles and Rockets* (New York: Macmillan, 1977).

45. Indeed, the USAF has the option of creating such a new "Space Command" under serious study.

46. Fred C. Ikle, "Can Nuclear Deterrence Last Out the Century?" *Foreign Affairs* 51 (January 1973): 285.

Chapter 5 Endnotes

1. Zbigniew Brzezinski, speech of 15 January 1979, quoted in *The New York Times*, 16 January 1979, p. 11.

2. Case studies of the problems of integration in both new and older states are presented in Stephanie G. Neuman, *Small States and Segmented Societies: National Political Integration in a Global Environment* (New York: Praeger, 1976).

3. Henry Brandon, "Persian Gulf Feels the Balance Shift," *The Washington Star*, 14 January 1979, p. E3, notes that a rebellion of Dofari tribesmen which lasted 11 years came to international attention only when the tribesmen, under the leadership of the South Yemen Marxist Popular Front for the Liberation of Oman, had made such progress that they threatened the Strait of Hormuz—a stretch of water which connects the Persian Gulf and the Arabian Sea and is the gateway to the oilfields of Iran.

4. Richard Barnett, "Ultimate Terrorism," *The Progressive*, February 1979, p. 14.

5. For example, the tactics employed by Palestinian Arabs which have exacted costs from several other nations and compounded the difficulties of maintaining cease-fires between Israel and its Arab neighbors. See Judy Bertelson, *Nonstate Nations in International Politics* (New York: Praeger, 1977), p. 251.

6. Richard Ned Lebow, "The Origins of Sectarian Assassination: The Case of Belfast," *Journal of International Affairs* 32 (Spring-Summer 1978): 61.

7. Brian M. Jenkins, "International Terrorism: Trends and Potentialities," *Journal of International Affairs* 32 (Spring-Summer 1978): 123.
8. Ibid., p. 122.
9. Ibid.
10. Ibid.
11. Ibid.
12. In this instance, environmentalism and ethnicity may combine in a synergistic antigovernmental reaction. Jenkins, "International Terrorism," p. 123, notes that in France and Spain, Breton and Basque separatists have bombed nuclear reactors in the name of both autonomy and environmentalism.
13. Richard Ryan and Gary Schuster, "'ELF' in UP of Michigan: UP to Get Buried Grid, Source Says," *Detroit News*, 11 January 1979, p. 1.
14. "US Preparation for Future Low-Level Conflict," Rand papers, P-5830 (July 1977), p. 11.
15. Ibid., p. 17. See also Paul A. Tharp, Jr., "The Laws of War as a Potential Legal Regime for the Control of Terrorist Activities," *Journal of International Affairs* 32 (Spring-Summer 1978): 91-100.
16. Text of the speech by Lt. Gen. Obasanjo may be found in *Survival* 20 (November-December 1978): 268-269.
17. See, for example, *Renmin Ribao* (People's Daily), 4 November 1978, p. 5; "African People Tempered in Turmoil and Struggle," *Beijing Review* 22 (5 January 1979): 22.

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Abbreviations

ABM	antiballistic missile
ALCM	air-launched cruise missile
ASAT	antisatellite
ASW	antisubmarine warfare
ATGM	antitank guided missile
AWACS	airborne warning and control system
BAMBI	Ballistic Missile Boost Intercept
BMD	ballistic missile defense
CMEA	Council for Mutual Economic Assistance
CONUS	continental United States
CPB	charged-particle beam
C ³ I	command, control, communications and intelligence
DARPA	Defense Advanced Research Projects Agency
DEW	directed-energy weapons
DOD	Department of Defense
DR&E	Defense Research and Engineering
FEBA	forward edge of the battle area
GEODSS	Ground-Based Electro-Optical Deep Space Surveillance
GNP	gross national product
HALO	high-altitude, large optics
HEL	high-energy laser
ICBM	intercontinental ballistic missile
IRBM	intermediate range ballistic missile
LSI	large-scale integration
MAD	mutual assured destruction
MAP	multiple-aim-point
MIRV	multiple independently targetable reentry vehicle
MSI	medium-scale integration
MSP	Mosaic Sensor Program
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NTM	national technical means
OAPEC	Organization of Arab Petroleum Exporting Countries
OPEC	Organization of Petroleum Exporting Countries
PGM	precision-guided munitions
PVO Strany	Soviet National Air Defense

R&D	research and development
RD&A	research, development and acquisition
SALT	Strategic Arms Limitation Talks
SEAL	sea-air-land team
SLBM	sea-launched ballistic missile
SMEC	Strategic Missiles Evaluation Committee
SPS	solar power satellites
TGSM	terminally guided submunitions
USAF	United States Air Force
USDR&E	Under Secretary of Defense for Research and Engineering
VHSI	very high-speed integration
VLSI	very large-scale integration

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Commander Harlan K. Ullman, United States Navy, Office of the Deputy Undersecretary of Defense for Policy. Before his assignment to the Department of Defense, Commander Ullman taught national security affairs at The National War College. He has broad fleet experience in destroyers and in Vietnam and served as exchange officer with the Royal Navy on the H.M.S. *Bacchante* and at the British Royal Naval College. He received a doctoral degree from the Fletcher School of Law and Diplomacy, Tufts University, and spent a year as a Research Fellow with the International Institute for Strategic Studies in England.

Ambassador Francis T. Underhill, US Department of State (Retired). Ambassador Underhill is a Senior Research Fellow in the Research Directorate, National Defense University. Before joining the University, he was United States Ambassador to Malaysia. He has had extensive Foreign Service experience in Asia, including service as Deputy Chief of Mission, United States Embassy, Republic of Korea, and as Political Counselor, United States Embassy, Republic of the Philippines. Ambassador Underhill received a bachelor of arts degree in history from Wesleyan University and a masters degree in international politics from the Fletcher School of Law and Diplomacy, Tufts University. He is a graduate of the Army War College.

The Participants

Lieutenant General Robert G. Gard, Jr., United States Army, President, the National Defense University. Prior to his assignment to the National Defense University, General Gard commanded the US Army Military Personnel Center from 1975 to 1977, and the US Army Training Center and Fort Ord from 1973 to 1975. He has served as the Army's Director of Human Resources Development, as Military Assistant to the Secretary of Defense, and as Special Assistant to the Assistant Secretary of Defense for International Security Affairs. He commanded the

9th Infantry Division Artillery in Vietnam until appointed Division Chief of Staff. General Gard is a graduate of the United States Military Academy and received master of arts and doctoral degrees from Harvard University. A former Army Fellow with the Council on Foreign Relations, General Gard is a graduate of The National War College.

Rear Admiral John C. Barrow, United States Navy, Commandant, The National War College. Admiral Barrow's distinguished career as a naval aviator includes assignments in politico-military affairs and strategic planning, as well as extensive command experience at sea. He has been Director of the Politico-Military Policy Division, Office of the Chief of Naval Operations; Special Assistant for Pan-American Affairs to the Chief of Naval Operations; and Executive Assistant and Senior Aide to the Deputy Chief of Naval Operations for Plans and Policy. His operational assignments include service as Commander, Tactical Wings Atlantic; Commander, Attack Carrier Air Wing THREE; Commanding Officer, U.S.S. *Ogden*; Commanding Officer, U.S.S. *Oriskany*; and Commander, Fighter Squadron 32. Admiral Barrow is a graduate of the United States Naval Academy and received master of arts and master of arts of law and diplomacy degrees from the Fletcher School of Law and Diplomacy, Tufts University.

Dr. Barry M. Blechman, Assistant Director for Weapons Evaluation and Control, US Arms Control and Disarmament Agency. In addition to his other duties with the Arms Control and Disarmament Agency, Dr. Blechman is Deputy Chairman of the US Delegation for Negotiations on Conventional Arms Transfers. He headed the defense analysis staff at The Brookings Institution and coauthored Brookings' annual review of the Federal budget. He has been affiliated with the Center for Naval Analyses, and has served as consultant to the Department of Defense, the United States Senate Committee on the Budget, the Joint Economic Committee, and the National Academy of Sciences. Dr. Blechman has been a visiting professor at The Johns Hopkins School of Advanced International Studies, and received a doctoral degree in international politics from Georgetown University.

Mr. Robert R. Bowle, Deputy Director for National Foreign Assessment, US Central Intelligence Agency. Professor Bowle's broad involvement in government and academic affairs spans several decades of distinguished service. Prior to accepting his current assignment, he had directed the Harvard Center for International Affairs from its inception, except for a 2-year leave

of absence to serve as Counselor of the Department of State. Among his other government appointments, Mr. Bowie has been Director of the Policy Planning Staff, Assistant Secretary of State for Policy Planning, and a member of the Planning Board of the National Security Council. He is a former Professor of Law at Harvard Law School, Assistant Attorney General of Maryland, Assistant Director, Maryland Legislative Council, and a widely read author, coauthor, and editor of books on law and international affairs. Professor Bowie received his bachelor's degree from Princeton University and his bachelor of laws degree from Harvard Law School.

Lord Hugh Caradon, *Hugh Mackintosh Foot*. Lord Caradon has had a long and distinguished career as a British overseas administrator and as a British representative with the United Nations. He was Minister of State for Foreign and Commonwealth Affairs and Permanent United Kingdom Representative to the United Nations after serving in the UN as Ambassador and Permanent United Kingdom Representative on the Trusteeship Council, as consultant to the Special Fund of the UN, and as a member, United Nations Expert Group on South Africa. Lord Caradon was the author and sponsor of UN Resolution 242. He was Captain-General and Governor-in-Chief of Jamaica, and Governor and Commander-in-Chief of Cyprus. In 1951, King George VI knighted Lord Caradon and in 1964 Queen Elizabeth made him a life peer, Baron Caradon of St. Cleer. He was educated at Leighton Park School, Reading, and St. Johns College, Cambridge.

Honorable William E. Colby, Jr. Mr. Colby served as Director of the US Central Intelligence Agency from 1973 to 1976, culminating a long and distinguished career which began in the Office of Strategic Services under General Donovan during World War II. He served with US Embassies in Stockholm and Rome and as special assistant to the US Ambassador in Saigon, where he helped initiate the strategic hamlet program. He resigned from the Agency in 1968, and served later as Director of the Pacification Program, with the rank of Ambassador. In 1971 Mr. Colby returned to the Agency as its Executive Director. He is a senior partner of the firm of Colby, Miller and Hanes in Washington, DC.

Mr. Leslie C. Dirks, Deputy Director for Science and Technology, US Central Intelligence Agency. Mr. Dirks has been with the CIA since 1961, working in scientific and technical programs. Before being named Deputy Director for Science and Technology, he was Director of the Office of Development and Engineering. Other assignments include Deputy Director of Special Projects and staff chief in the Office of Special Projects. He was awarded the Intelligence Medal of Merit in recognition of his outstanding performance. Mr. Dirks received a bachelor of science degree in physics from the Massachusetts Institute of Technology, and attended Oxford University as a Rhodes Scholar, where he received a bachelor of science degree in physics.

Dr. Robert R. Fossum is the Director of the Defense Advanced Research Projects Agency (DARPA). Prior to assuming this position he served as Dean of Science and Engineering at the Naval Postgraduate School, Monterey, California, where he was previously Dean of Research. From 1969 to November 1974, Dr. Fossum was Vice President and General Manager of the Electromagnetic Systems Laboratories and from 1956 to 1969 he was Laboratory Manager for Sylvania's Electronic Defense Laboratories in Mountain View, California. Dr. Fossum received a bachelor of science degree from the University of Idaho, a master's degree from the University of Oregon, and a doctoral degree in statistics from Oregon State University. He is a member of several government and industry panels.

Mr. Stephen J. Hadley, Associate, Shea & Gardner, Attorneys at Law. Prior to joining Shea & Gardner, Mr. Hadley was a staff member in the Office of Program Analysis, National Security Council. While with the National Security Council, he chaired working groups concerned with the United States negotiating positions in the MBFR talks in Vienna, the prospects for United States/Soviet naval arms limitations in the Indian Ocean, US force structure in Europe, US defense posture, and the non-proliferation of nuclear weapons. A former defense issues analyst in the Office of the Assistant Secretary of Defense (Comptroller), he received his bachelor's degree from Cornell University and his law degree from the Yale University Law School.

Mr. Philip A. Karber, Assistant Vice President (National Security Programs), BDM Corporation, and Project Director, Office of the Secretary of Defense, Net Assessment Office. Mr. Karber was responsible for all aspects of Project 186—NATO and Warsaw Pact capabilities—in the Net Assessment Office and he has

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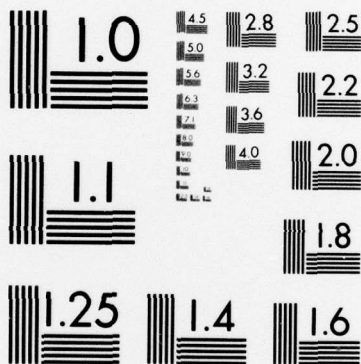
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served as a consultant with the Center for Strategic and International Studies at Georgetown University. The author of several articles on defense policy and weapons systems, Mr. Karber received his bachelor's degree from Pepperdine College and his master's degree from Georgetown University, where he is a doctoral candidate in international relations.

Dr. Robert Kupperman, Chief Scientist, US Arms Control and Disarmament Agency. A graduate of New York University, Dr. Kupperman's government experience includes service with the Office of Emergency Preparedness, the Arms Control and Disarmament Agency, and the White House. In the private sector, he has been associated with the Institute for Defense Analyses, the California Institute of Technology, Douglas Aircraft, and Republic Aviation.

Mr. William S. Lind, Legislative Assistant, Armed Services Committee, US Senate. In addition to being a widely published author of works on military affairs, Mr. Lind assisted in the preparation of the Taft White Paper on Defense and in the development of Senator Taft's concept of a New Technology Navy. Graduating Phi Beta Kappa, magna cum laude, from Dartmouth in 1969, he received a master's degree from Princeton in 1971 and is currently a doctoral candidate.

Dr. Edward N. Luttwak, Senior Fellow, Center for Strategic and International Studies, Georgetown University. Dr. Luttwak is a distinguished scholar and lecturer in international affairs and national security policy, and the author of several books on the strategic balance, the political uses of sea power, the Israeli Army, and other national security affairs issues. He is an Adjunct Professor, School of Advanced International Studies, The Johns Hopkins University, and is associated with the Advanced Research Center, US Naval War College. He was the Associate Director, Washington Center of Foreign Policy Research, School of Advanced International Studies at Johns Hopkins, and Consultant to the Secretary of Defense. He received a bachelor of science degree in economics from the London School of Economics and a doctoral degree in political science from The Johns Hopkins University.

Mr. Christopher J. Makins, Senior Associate, Program on Western European Trends, Carnegie Endowment for International Peace. Mr. Makins served in the British Diplomatic Service for a number of years; this service included assignment as First Secre-

tary, Political Section, Her Majesty's Embassy, Washington, DC. He has also served as Deputy Director of the Trilateral Commission in New York, as Consultant to the German Marshall Fund of the United States, and as an Associate of the Lehrman Institute and Director of the Institute's Study Group, *National Security in a More Plural World*. The widely published author of works on international security issues, Mr. Makins received bachelor of arts and master of arts degrees from Oxford University, and was a Fellow, All Souls College, Oxford.

Major General James E. McInerney, Jr., United States Air Force, Director of Programs, Deputy Chief of Staff for Programs and Analysis, Headquarters, US Air Force. Prior to his current assignment, General McInerney served as Commandant, the Industrial College of the Armed Forces. He has been Director of Military Assistance and Sales for the Air Force; Chief, Air Force Section, Joint United States Military Mission for Aid to Turkey; Chairman of the Department of Defense Air Munitions Requirements and Development Committee; and Chief, Development Plans and Analysis Group, in Air Force Headquarters. His operational commands include service as Commander of the 13th and 44th Tactical Fighter Squadrons in Southeast Asia. He is a graduate of the United States Military Academy and The National War College, and received a master of science degree in international relations from George Washington University.

Dr. Frederick J. Milford, Associate Director for Research, Battelle's Columbus Laboratories. In addition to a highly successful career with Battelle in the area of research program management, Dr. Milford has also been a visiting Professor of Physics at the University of Washington, and a member of the Visiting Committee of the Harvard University Division of Engineering and Applied Physics. The coauthor of the successful textbook, *Foundations of Electromagnetic Theory*, he is active in professional organizations. Dr. Milford received a bachelor of science degree in physics from Case Institute of Technology and holds a doctoral degree from Massachusetts Institute of Technology.

Major General John E. Ralph, United States Air Force, Commandant, Industrial College of the Armed Forces. Before assuming command of the Industrial College, General Ralph was Senior Military Advisor to the Director of the Arms Control and Disarmament Agency and Executive Secretary of the US SALT

delegation in Geneva. He has served as Special Assistant to the Chief of Staff for the Airborne Warning and Control System, and as *Director of Doctrine, Concepts, and Objectives* in Air Force Headquarters. He has been Commandant of the Air University, Commander of the 4th Tactical Fighter Wing, and has extensive operational experience in Southeast Asia. General Ralph is a graduate of the United States Military Academy and the Industrial College of the Armed Forces. He received a master's degree from the Woodrow Wilson School, Princeton University.

Dr. Earl C. Ravenal, Professor of International Relations, Georgetown School of Foreign Service. Dr. Ravenal was president of an industrial corporation when he was named Director of the Asian Division (Systems Analysis) in the Office of the Secretary of Defense in 1967. Since leaving government service, in addition to his teaching responsibilities, he has been a frequent speaker and panelist throughout the foreign affairs community and has given expert testimony before the Congress on national security affairs. He is a widely read author whose work appears frequently in the press and in professional publications here and abroad. He is an alumnus of Harvard; studied at the University of Cambridge, England; and received his master's and doctoral degrees from The Johns Hopkins University.

Honorable Brent Scowcroft, International Six, Inc. Following his retirement from the United States Air Force, General Scowcroft served as Assistant to the President for National Security Affairs. He previously served as Military Assistant to the President, and as Deputy Assistant to the President for National Security Affairs under Dr. Henry Kissinger. He has been Special Assistant to the Director of the Joint Staff, Organization of the Joint Chiefs of Staff; has served in the Office of the Assistant Secretary of Defense for International Security Affairs; and was Deputy Assistant for National Security Council Matters in the Directorate of Plans, Headquarters, US Air Force. A graduate of the United States Military Academy, General Scowcroft received master of arts and doctoral degrees in international relations from Columbia University. He is a graduate of The National War College and is currently a member of the President's General Advisory Committee on Arms Control.

Honorable George M. Seignious, Director, US Arms Control and Disarmament Agency. Before assuming the Directorship of the Arms Control and Disarmament Agency, Mr. Seignious served as the at-large member of the US SALT delegation in Geneva. He served in the United States Army for 32 years and his last active duty assignment, in the grade of Lieutenant General, was as Director of the Joint Staff, Organization of the Joint Chiefs of Staff. He has served as Director of Defense Security Assistance Agency, Deputy Assistant Secretary of Defense for Military Assistance, United States Commander in Berlin, and Commanding General of the 3d Infantry Division in Germany. He was military advisor to Governor Averell Harriman and Cyrus Vance at the 1968 Paris Peace Talks on Vietnam. A graduate of The Citadel, Mr. Seignious also served as President of The Citadel prior to joining the SALT delegation.

Ms. Joyce Lasky Shub, Foreign Policy Advisor to Senator Joseph Biden. Formerly with the staff of the House International Relations Subcommittee on Future Foreign Policy, Ms. Shub began her career as Assistant Editor of the *New Leader*. She was a senior publishing professional before living abroad for 12 years, where she worked for NBC in Moscow and on other assignments in Bonn and Paris. She is a published novelist and was a member of the 1976 congressional delegation which visited China. She is a graduate of Barnard College.

Major General James M. Thompson, United States Army, assumed the position of Chief, Joint United States Military Mission for Aid to Turkey in March 1979. During his participation in the seminar, he was serving as Director, Policy, Plans, and National Security Affairs in the Office of the Assistant Secretary of Defense for International Security Affairs. General Thompson is an Army Engineer, with extensive command and staff experience. Prior to his assignment to the Office of the Assistant Secretary of Defense for International Security Affairs, he was Deputy Director for Estimates, Defense Intelligence Agency. He is a graduate of the Army War College and holds a master of arts degree from Oxford College, England.

Dr. W. Scott Thompson, Professor of International Politics, Fletcher School of Law and Diplomacy, Tufts University. A former White House Fellow, Dr. Thompson was a Special Assistant to the Secretary of Defense prior to his association with the Fletcher School. He has been a Visiting Research Fellow at

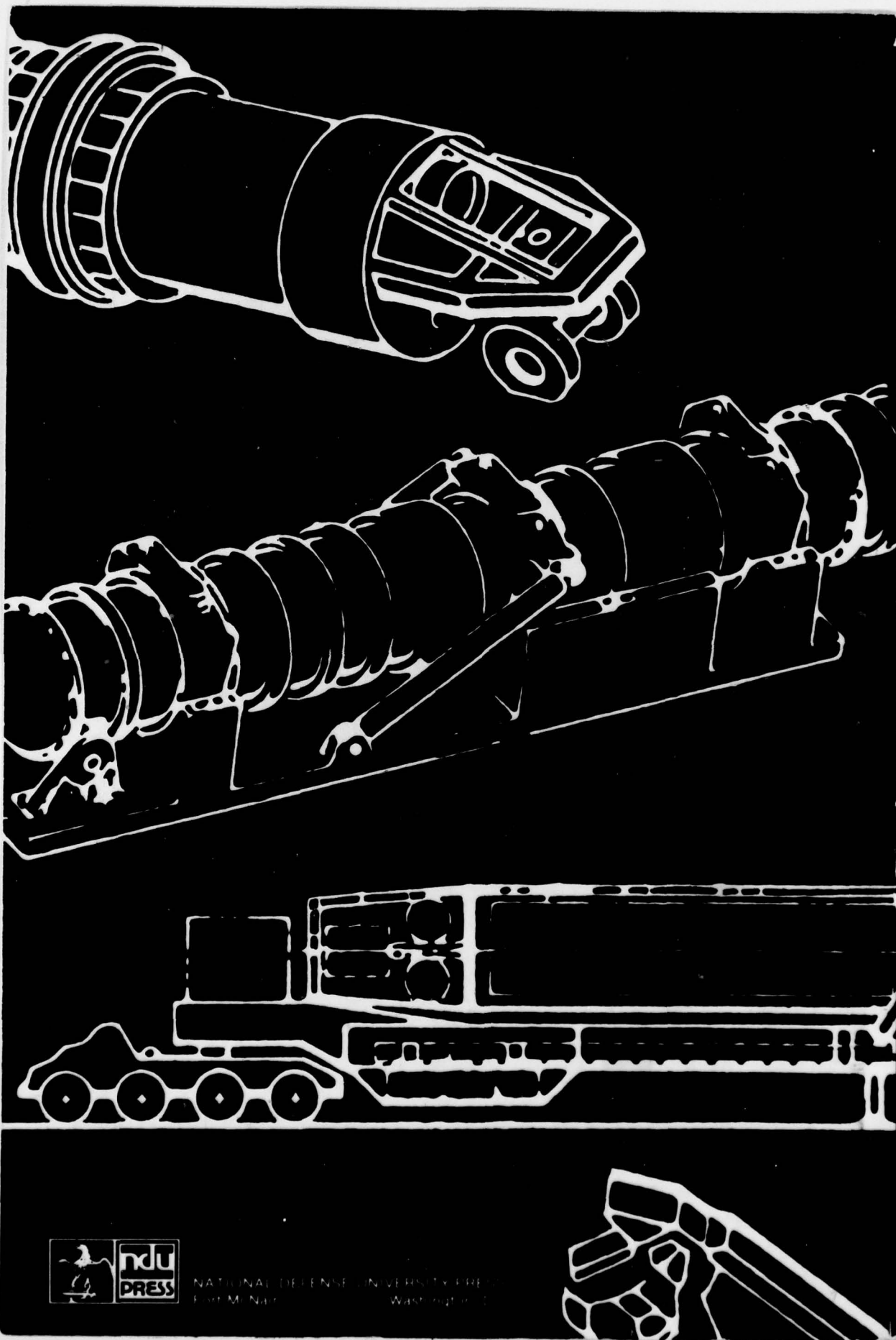
Chulalongkorn University in Bangkok and at the University of the Philippines, and is the author of several published works on the developing world. Dr. Thompson received a doctoral degree from Oxford University where he studied as a Rhodes Scholar.

Dr. Robert H. Trice, Director, Arms Transfer Policy, Office of the Assistant Secretary of Defense, International Security Affairs. Dr. Trice is associated with the Department of Political Science, Ohio State University. His past research has focused on the Arab-Israeli conflict and US national security policy. A graduate of the College of William and Mary, Dr. Trice received master of arts and doctoral degrees from the University of Wisconsin.

Brigadier General Dale A. Vesser, United States Army, Deputy Director, Force Development and Strategic Plans, Directorate for Plans and Policy, Office of the Joint Chiefs of Staff. Prior to his current assignment, General Vesser served in various staff intelligence positions in the Office of the Secretary of Defense and was a staff member, National Security Council, Executive Office of the President from 1967 to 1969. An experienced commander, General Vesser is a graduate of the United States Military Academy and received bachelor of arts and master of arts degrees from Oxford University. He is a graduate of The National War College and a former Fellow at the Center for International Affairs, Harvard University.

Mr. Adam Yarmolinsky, Counselor, US Arms Control and Disarmament Agency. A prominent lawyer-educator with a distinguished background in government service, Mr. Yarmolinsky has served as a Special Assistant to the Secretary of Defense, as a Deputy Director of the President's Anti-Poverty Task Force, as Chief of the Emergency Relief Mission to the Dominican Republic, and as Principal Deputy Assistant Secretary of Defense for International Security Affairs. He has taught at several institutions of higher learning and was educated at Harvard and at the Yale Law School.

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